AN INVESTIGATION OF KNOWLEDGE AND SKILL REQUIREMENTS FOR EMPLOYMENT AS A MACHINE OPERATOR. A CASE STUDY OF A LARGE TEXTILE COMPANY.

A dissertation submitted to the Faculty of Education, University of KwaZulu-Natal, Pietermaritzburg, in partial fulfillment of the requirements for the Master of Education (Adult Education).

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Abstract

This research, which took the form of a case study in a large textile factory, is primarily concerned with finding out if there is a link between a particular educational level (i.e. ABET level 4 Communications/Language and Mathematics) used as a measure for the first stage of selecting prospective employees as machine operators, and a hard skill (i.e. actually operating a machine).

After conducting interviews with nine people in the workplace; doing observations of three machine operators performing their jobs, and analysing various documents, such as the tool used for assessment, I found there to be an incongruence between the 'requisite' knowledge and skills and the actual knowledge and skills needed – the language and maths' competencies needed in order to be deemed 'competent' in the assessment are of a higher ABET level than the language and maths needed 'on-the-job'. But, this research is not simply about language and mathematics competencies. It is also about the 'new workplace' that has emerged with the advent and spread of globalisation. My study looks at the appropriateness of the 'measure' used as an entry requirement for a job, and by so doing it explores issues of inclusion and exclusion, and power relations. My study is, therefore, located within the critical social science paradigm and I raise questions around issues of morality, ethics and social justice.

Declaration

I, Britt Baatjes, declare that

(i) The research reported in this thesis, except where otherwise indicated, is my original work.

(ii) This thesis has not been submitted for any degree or examination at any other university.

(iii) This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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Signed:

12 July 2008

Acknowledgements

Chapter One: Introduction

Beginning in the last part of the 20th Century our world has become, and continues to be, faster, more technologically advanced and increasingly competitive. According to the International Labour Research and Information Group (ILRIG): 'We find ourselves living in a globalised world which has had a huge impact in the organisation of workplaces' (ILRIG, 1998:13).

New approaches to organising production, such as 'workplace restructuring', have emerged as companies seek to improve profits by increasing the productivity of their workforce/s. Pressure is put on companies and employees to become 'internationally competitive'. Employees are called upon to produce more goods in the same time, at the same or even at a lower cost to the companies. 'The push for increased competitiveness often means employees are expected to do new or different jobs' (ILRIG, 1998:13).

In his book 'Learning in social action', Griff Foley locates education within this set of workplace conditions and practices when he states:

> …in the post-Fordist problematic, education is to contribute to flexible specialisation by focusing on vocational training…education is seen as one component of a comprehensive approach to workplace restructuring, one which includes changes in industrial relations, technology and workplace organisation. The aim is a highly skilled, mobile workforce which will help to make industry internationally competitive. (Foley, 1999: 68 and 69).

This changing role of education and training and how they relate to the workplace became evident in South Africa in the 1990s in the form of the 'South African Qualifications Authority Act' (1995) which gave rise to the National Qualifications Framework, and in the form of the 'Skills Development Act' (1998) which established the National Skills Authority (which was responsible, with the Minister of Labour, for the 'National Skills Development Strategy' (2001)); the National

Skills Fund; Sector Education and Training Authorities; and learnerships. All of the above, in some form or other, are in place to 'skill', 'upskill' or re-skill South Africans, in order to make them more competitive in the global marketplace. This link between 'skill' and 'competitiveness' is a dominant or common-sensical view, and in my research, I question this with regards to the kind/s of skill/s required in the workplace.

1) Background/context

In my experience working in Workplace Learning and Adult Basic Education and Training (ABET) with various companies over the last fourteen years, I have seen many of these companies set certain minimum educational levels in order for prospective employees to secure employment. In some instances, this minimum level (for example, Matric) is used for all jobs within the company, including cleaners and packers. Many of these companies use the Independent Examinations Board (IEB) placement assessment tool for Communications/Language and Mathematics, in order to find out the ABET level/s of prospective employees, and then consider the person for employment or not on this basis. The jobs are to do with hard skills, such as operating a machine, while the placement tool determines the level of literacy and numeracy/mathematics of the person. One of the reasons I wanted to embark on this study was a nagging concern of mine that there may not be a link between the literacy and numeracy skills, and the hard skills (and/or any other operational skill/s the employee may have to do as part of his or her job). However, if there is one, I wanted to ascertain what it is.

2) Focus

In this context of an ever-changing world and world of work – what many say is an inevitable part of globalisation - the focus of this research is an examination of the actual knowledge and skills required to perform the job of a machine operator

in the textile industry, and what a company has set or prescribed as knowledge and skills required to be employed as a machine operator.

This research, therefore, focuses on the following:

- The company's employment criteria for machine operators. Specific focus will be given to the minimum required educational level, and the mandatory literacy/language and/or numeracy/mathematical skills required to be employed as a machine operator.

- Machine operators at work. Specific focus will be given to the knowledge and skills needed in order to 'competently' do the job of a machine operator in the company.

- A comparison between the 'actual' knowledge and skills required and the 'required' or 'prescribed' knowledge and skills, if there is a difference.

- An analysis of why there is a disparity (if one is found).

3) Rationale

Since 1994 I have worked in the field of adult education. I have spent much of that time managing adult basic education and training (ABET) programmes in various companies. I currently teach on the Certificate in Education (Workplace Learning) programme on the Edgewood Campus of the University of KwaZulu-Natal. Choosing to do research in the field in which I work is one of the reasons I have chosen this particular topic.

Even though this research focuses on one case study, it takes into account global and national factors that impact on all of us.

Global factors

In this globalised world and 'new workplace', potential employees are frequently told that they do not have the necessary knowledge and skills to perform the 'new' jobs that the globalised world has created. A recent article titled 'Graduates lack basic job skills, study finds', claimed that 'South African graduates are not very productive in the workplace because they lack basic skills' (Govender, 2007: 11).

Inadequate skills, including lack of literacy skills, have been cited as the reason why companies and even economies perform poorly (Moser 1999 cited in Castleton, 2002: 559). Companies are increasingly requiring that employees have certain levels of education in order to access jobs. Many 'traditional' workers (Hammer 1996 cited in Castleton, 2002: 559) – 'those deemed to be least skilled' (Castleton, 2002: 559) are at the greatest risk of either losing their jobs through retrenchment or never being able to find employment. In all the hype about skills and the shortage thereof, no mention is made of the fact that there exists a shortage of jobs throughout the world, including a severe shortage in South Africa. In order to keep up with this 'global competiveness' (Marshall in Walters, 1997: 59) many workforces have been reduced in size – this is hugely visible in South Africa where retrenchments occur on a daily basis. 'Downsizing' and 'anorexic workplaces' are 'justified by global competition' (Marshall in Walters, 1997:59). Examining the local implications of this globalised context is a further rationale for my study.

National factors

South African policy documents to do with employment, produced since the new government came to power in 1994, such as the Employment Equity Act (Act No. 55 of 1998), are filled with language that states very clearly that the legislation will deal with 'redress, 'equity' and 'righting the wrongs of the past'. Yet in 2008 South Africa has an official unemployment rate of 25,5% (StatsOnline, Statistics South Africa, Labour Force Survey, September 2006) and an unofficial

employment rate of 40%, (Heritage Foundation cited in Lehohla, 2005). The majority of the unemployed are Black African people who were previously disadvantaged. Through my study, I hope to add to knowledge in the area of the relationship between skills and jobs. In South Africa, very little research exists to do with the link between skills and employment criteria. I am also interested in finding out whether the supposed need for higher skills is actually a gate-keeping mechanism which is used to exclude so many people from accessing jobs.

This research is primarily concerned with finding out if there is a link between a particular educational level (such as ABET level 4 Communications/Language and Mathematics) and a hard skill. How does this particular company explain why the prescribed level of education is required to perform the job of a machine operator? If there is a discrepancy between the Language and Mathematics 'competencies', and the hard skill, and the one does not necessarily equip you to do the job competently (or you could do the job competently without the Language and/or Mathematics skills), how does one account for what the company is requiring?

4) Conceptual Framework

This research is not simply about language and mathematics competencies. It is about the 'new workplace' that has emerged with the advent and spread of globalisation. This research will, therefore, be conducted within a framework that encompasses the following themes:

- The new worker in a global world – what knowledge and skills does s/he need?
- Skill and its expanding definition.
- Literacies and their meanings.
- Human capital theory, screening and credentialism.
- Policy, practice and social justice.

All of the above will be discussed more fully in Chapter Two.

I developed three perspectives to do with the so-called 'new workers' in a new workplace and the competencies they require. These perspectives help to frame my understanding of the study. These perspectives are:

Perspective One: Competency and Globalisation
This perspective is to do with globalisation and the new demands placed on workers in a 'new' world and in 'new' workplaces that have changed so rapidly, that the 'new worker' needs a different set of skills (defined more broadly – refer to Chapter Two) in order to perform his or her job 'competently'. This includes, for example, having higher levels of general literacy and general numeracy skills than were needed before. Particular literacy and numeracy levels are often used as a basis for measuring whether or not someone will be able to do a job competently, and also to enable a person to access further training.

Perspective Two: Competency and Exclusion
The second argument is to do with exclusion and this argument is about excluding people under the guise of 'competency'. Supporters of this argument state that in a world with too few jobs, people are constantly having to upskill and re-skill in order to try to secure and keep employment. The job requirements are no different to what they were before, or the new job requires skills that are not really that difficult to master, but one is made to feel inadequate without a formal qualification or particular level of education or certificate.

Perspective Three: Competency and Workplace Literacy
The third argument is that there are certain skills and knowledge in the workplace that workers have to know and be able to do, and these are workplace-specific and contextualised. There are different 'workplace literacies' in operation at different workplaces, and workers have to understand and work with these particular specialised 'literacies'. The relationship between these specialised workplace literacy skills and school-based literacy is complex and not necessarily one of correspondence.

In understanding the link between the actual literacy and numeracy skills and the required literacy and numeracy skills, this research will try to ascertain which perspective is at play in this particular company (perhaps there will be more than one).

5) Purpose

The purpose of this research is to ascertain what knowledge and skills a person requires in order to competently perform the job of a machine operator in a floorcoverings manufacturing company. This company, whose head office is situated in Pietermaritzburg, KwaZulu-Natal, where the research took place, falls under the textiles manufacturing sector.

There are numerous definitions of 'competence'. For the purposes of this research, I use the South African Qualifications Authority's definition in 'Criteria and guidelines for assessment of NQF registered unit standards and qualifications':

> Applied competence is the overarching term for three kinds of competence:
>
> - Practical competence:
>   Our demonstrated ability to perform a set of tasks.
> - Foundational competence:
>   Our demonstrated understanding of what we or others are doing and why.
> - Reflexive competence:
>   Our demonstrated ability to integrate or connect our performances with our understanding of those performances so that we learn from our actions and are able to adapt to changes and unforeseen circumstances (SAQA, 2001: 21).

The argument about 'applied competence' as presented in SAQA documents (SAQA, 2001) is based on the notion that in a world that changes very quickly and all the time, this kind of 'competence' is absolutely necessary in order for people, and especially workers, to be able to change and adapt as things constantly change. The argument further suggests that people need to be able to have all three 'competences' and be able to know about things, do things and reflect on what they know and do. If, in today's world, you do not have these 'skills', you will not be able to adapt to this new and changing world, and new and changing world of work.

6) Research Questions

1) What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?
2) What are the textile company's employment criteria for machine operators?
3) If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

7) Methodology

My study took the form of a case study and focused on a large floorcoverings manufacturing company in Pietermaritzburg, KwaZulu-Natal. My research generated a 'thick, rich description' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 3) of the relationship between actual and prescribed levels of 'competence' or 'skills' needed to operate a machine in this particular company. It also 'tested existing theory' (Masters in Education Handout, University of KwaZulu-Natal, 2007:3) to do with the 'themes' listed above under 'Rationale'.

I have located my study within a critical paradigm because my study deals with much more than merely the issue at hand (i.e. the appropriateness of the 'measure' used as an entry requirement**).** The study is qualitative in nature and aims to provide an in-depth description of the relationship between actual knowledge and skills required in order to competently operate a machine at the company, and prescribed knowledge and skills required by the company for employment.

My unit of analysis is the knowledge and skill requirements (actual and purported) needed to perform the job of operating a machine competently. I used interviews, observations and documentary analysis, drawing on a variety of sources.

8) Limitations

My study was conducted in some depth, but, as my case study only focused on one floorcoverings manufacturing (textile) company, I will not be able to generalise my findings. I do not know if my findings are common to other companies in the textile sector and/or to companies in other sectors. However, on the basis of my own experience of education and training, I have some sense of the relevance of my findings to other contexts, but this would need to be tested by further research (there is some contestation with regards to case studies and generalisation, and I explore this further in Chapter Three (Methodology)).

9) Outline of chapters

Chapter One: Introduction
In this chapter I introduce my study by providing the background to it, and begin to make links between the local and the global, and how the global impacts on the local. I outline my rationale, conceptual framework, purpose, research questions and methodological approach.

Chapter Two: Literature Review and Conceptual Framework

In this chapter I look at and discuss the framework within which the study is conducted. This framework is organized according to the following themes:

- The new worker in a global world – what knowledge and skills does s/he need?
- Skill and its expanding definition.
- Literacies and their meanings.
- Human capital theory, screening and credentialism.
- Policy, practice and social justice.

Chapter Three: Methodology

In this chapter I explain why I chose the particular paradigms and approach I did. I discuss the site, sample and sources and how I collected my data. I then explain how I analysed my data. I address the ethical aspects as well as the limitations of my study.

Chapter Four: Findings and Analysis

In this chapter I analyse my findings according to the key themes which I have identified from my conceptual framework, literature review, research questions and from my questions which I used for interviews.

Chapter Five: Conclusion

In this chapter I revisit my research questions and address them with reference to my findings and the wider literature. I conclude and make certain recommendations.

Chapter Two: Literature Review

This research focuses on communications/language and mathematics' competencies required to do the job of a machine operator within a particular workplace context, and how these competencies relate to employment. Very little literature is available on this, especially with regard to employment criteria. Also very little literature is available in the South Africa context. I have referred to African and South African studies which bear some similarities to mine – these are 'New work practices, new literacies and new identities: a shift towards a 'new work culture' in a soft drinks factory in Maputo' (Domingos Buque, 2003); 'A comparative study of learner and management perceptions of ABET English Level 4 in selected companies in Durban' (Bridget Campbell, 2002); and 'New workplaces, new literacies, new identities' (M. Prinsloo and S. Scholtz, 2000).

There is, however, much literature available on the framework within which I situate my research. The framework encompasses the following:

- The new worker in a global world – what knowledge and skills does s/he need?
- Skill and its expanding definition.
- Literacies and their meanings.
- Human capital theory, screening and credentialism.
- Policy, practice and social justice.

I explore the themes of 'the new worker in a global world', 'skill and its expanding definition' and 'human capital theory, screening and credentialism' in order to provide a framework for answering the first of my three research questions 'What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?'

I explore the themes of 'the new worker in a global world', 'skill and its expanding definition' and 'literacies and their meanings' in framing the second of my

research questions 'What are the textile company's employment criteria for machine operators?'

I explore the themes of 'skill and its expanding definition', 'literacies and their meanings' and 'policy, practice and social justice' to frame the third of my research questions 'If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?'

These thematic areas are inter-related in that the 'new' workplace in the 'global world' is influenced by 'human capital theory' which focuses on the economic productivity of employees. The 'new' workplace is also linked with employees having to have certain 'skills' which are not necessarily the traditional ones. 'Literacy' is one of these skills and is also often linked to productivity in the workplace. The appropriateness of an aspect of the 'new' workplace is looked at in this study (employment criteria) - questions are raised to do with the fairness of 'policy', and the translating of 'policy into 'practice' – and ultimately questions of justice are raised.

This chapter will examine relevant scholarship in each of these areas with reference to the present study.

1) The new worker in a global world – what knowledge and skills does s/he need?

The literature to do with the competencies the 'new' worker needs seems to be divided into two – on the one hand governments and business are arguing for more and better skills for potential employees to do their jobs; and, on the other, many academics are challenging this prerequisite. In 1990 in the United States, the Secretary of Labor appointed a commission to determine the skills that young people needed to succeed in the world of work. The commission completed its work in 1992. Its findings and recommendations continue to be used by many

involved in education, training and development of the workforce. The Secretary's Commission on Achieving Necessary Skills (SCANS) includes basic skills like reading with understanding, writing, and speaking; thinking skills like problem solving, learning how to learn, thinking of new ideas, setting goals, and choosing best alternatives; and also personal qualities (Kerka, 1992).

In 1992 in the United States, the Organisation for Economic Co-operation and Development stated that 'the new emphasis on skills as a major force in competitiveness has played a key role in propelling the issue of literacy to the fore of the policy debate' (National Center for Education Statistics, 1997:1). Much has been written on the link between inadequate skills (including literacy) and poor economic performance.

> Basic skills deficiencies - the inability to read, to write and to perform simple arithmetic – are not only keeping millions of Americans from adequate employment or job advancement, but they are costing U.S. employers estimated millions in lowered productivity, accidents and needless mistakes and in remedial training (Martin, 1983: 74).

This dominant discourse (that there is a direct link between basic skills and successful economies) is also prevalent in South Africa. The Skills Development Act (1998) aims to develop the skills of the South African workforce, to improve the quality of life of workers and their prospects of work, to improve productivity in the workplace and the competitiveness of employers, and to promote self-employment (Department of Labour, 1998).

Minister Mdladlana, the Minister of Labour, in his foreword to the revised 'National skills development strategy 2005 – 2010' states:

> It is my belief that through the National Skills Development Strategy 2005-2010, together with our social partners, we will support the broader goals

of government to halve unemployment and poverty, and reduce inequality
by 2014, and further to ensure that the institutions of skills development,
which in the main are the SETAs and the NSF, use their resources to
advance our skills revolution (Department of Labour, 2005: 2).

The former Deputy President, Phumzile Mlambo-Ngcuka, in her speech at the
launch of the Joint Initiative for Priority Skills Acquisition (JIPSA) on 27 March
2006, stated:

> I need not remind this audience that skills are the backbone on which
> every successful economy relies. We have learnt that from economies
> such as Malaysia and Japan, and most recently we had interesting
> discussions with the Deputy Prime Minister of Ireland and Prime Minister
> of New Zealand which can only confirm this essential truth. In both
> countries, their economic revival and turn around had the Skills Revolution
> at the core (Mlambo-Ngcuka, 2006).

As is evident from the above, skills development has become an important
component of South African society. In both of the above quotations, the issue of
the need for skills to improve the economy and 'reduce unemployment, poverty
and inequality' is taken as a given. In my study I raise questions to do with 'skill
and its expanding definition' and challenge the dominant discourse echoed in the
quotations above. There is, both in South Africa and throughout the world, a new
definition of skill which is 'now broader and more conceptually equivocal than it
has ever been' (Payne, 2000: 354). Hard skills are very often linked to other skills
such as communications/language and mathematics. I examine the changing
definition of skill in the following section entitled 'Skill and its expanding
definition'.

As a result of new minimum 'requirements' (such as a particular ABET level),
many potential employees do not have the 'required' knowledge and skills in

order to perform the jobs that the globalised world has created and requires. These jobs are supposedly 'new' in the way they are performed or they make use of new technology. In South Africa, there is much talk about skills and the shortage thereof – we have a 'Skills Development Act' (1998) and a 'National Skills Development Strategy' (2001), and the revised versions thereof, and, more recently, the 'Joint Initiative for Priority Skills Acquisition' (2006) to address this 'problem' or 'challenge'. However, very little is said of the fact that there exists a shortage of jobs throughout the world, including a severe shortage in South Africa. The official unemployment rate is 25,5% (StatsOnline, Statistics South Africa, Labour Force Survey, September 2006). In an article written in 2005 by the statistician-general, Pali Lehohla, entitled 'Why we need to speak out about misuse of data' (published in the Business Report on 20 January 2005), he defines the official (or narrow) definition of unemployment as:

> …the unemployed are those people in the economically active population who did not work during the seven days prior to the interview, want to work and are available to start work within two weeks of the interview, and have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview.

He goes on to explain the 'expanded definition' by saying:

> …the third criterion (some sort of work seeking activity) is dropped. The expanded definition therefore includes, as unemployed, those who might be termed 'discouraged job seekers'.

He states that this definition was used when the US-based Heritage Foundation released a report on South Africa, 'which identified unemployment, 'estimated to be as high as 40 percent', as a weakness of our country' (2005).

The 'new' workplace is also characterised by more technology and new and better machines and these have, in many instances, replaced people in the workplace. This replacement of people by machines is one of the issues raised by Jeremy Rifkin in his book 'The end of work':

> Today, the concerns over automation are being heard once again. This time, however, the field upon which the battle over technology is being fought has grown dramatically to encompass the whole United States economy and much of the global marketplace. Issues surrounding technological unemployment, which a generation ago touched primarily the manufacturing sector of the economy, affecting poor black workers and blue collar labourers, are now being raised in every sector of the economy, and by virtually every group and class of workers (Rifkin, 2000: 88).

2) Skill and its expanding definition

The meaning of the word 'skill' has changed over the decades. In the 1950s and 1960s, there was 'a traditional view of skill' (Keep and Mayhew, 1999 in Payne, 2000: 354) which held that there was a strong division between academic and 'hard' technical skills. This definition has gone through numerous changes over the decades, and 'has expanded almost exponentially to include a veritable galaxy of 'soft', 'generic', 'transferable', 'social' and 'interactional' skills, frequently indistinguishable from personal characteristics, behaviours and attitudes, which in the past would rarely have been conceived of as skills (Keep and Mayhew, 1999 in Payne, 2000: 354). 'If the notion of skill has always perhaps been 'essentially indefinable' (Ainley, 1993: 4), it is now both broader and more conceptually equivocal than it has ever been' (Payne, 2000: 354).

It is said by many people in business and government throughout the world, that the 'changing workplace' requires new and different skills and, therefore, this

'softening' of skills has had to occur. The Minister of Education, Naledi Pandor, in her address at the Pan African TVET and FET Conference on 20 August 2008, stated:

> The divide between academic and vocational training is not what it used to be. Artisans and technicians no longer need basic physical skills alone. They need to know how to adapt as products and production methods change, and as services across commerce, retail industry and the hospitality sector become specialised and sophisticated (Pandor, 2008).

In an article titled 'Global war for talent' James cited by Butcher states:

> At a tertiary level there may (also) be scope to add a work-readiness component to the final year of study. This would ensure that graduates are not only equipped with technical skills, but the requisite soft skills, to enable them to hit the ground running (Butcher, 2008: 1).

In line with Payne's arguments and the utterances of government and business opinion, things that are important in this 'new' workplace include, amongst others, the following so-called skills: interpersonal skills, problem-solving skills, higher order thinking skills, communication and mathematics' skills, lifeskills, the ability to work in a team, motivation, and a particular attitude.

As Jonathan Payne (2000: 360) so aptly states:

> At the same time, 'skill' today trammels within its net traditional technical capabilities, the conceptual and analytical skills of 'knowledge workers' and 'symbolic analysts' (Reich, 1992), as well as an ever expanding range of personal characteristics and behaviours, before binding them all together with the universal (and heavily ideological) glue of employee 'flexibility'.
>
> ……

'Skill' has become a broad term, 'whatever employers and policy makers want it to mean'.

From one perspective, it can be argued that, because new jobs require new knowledge and skills, organisations and businesses have had to raise the required education level of people seeking employment. This fits well with the argument of the 'new workplace' requiring 'new' and 'different' skills.

In research conducted in the Mining and Minerals Sector in 2002, the following was noted: 'The only qualification at NQF level 1 that workers can access is the Blasting Certificate for which they require ABET Level 3 English and Numeracy' (Baatjes, Aitchison and John, 2002: 45). In effect, this means that if a mineworker wanted to do a blasting certificate (blasting being a hard skill), he or she would have to have the necessary English language and numeracy skills at ABET Level 3. The link between a hard skill (blasting, in this case) and language and mathematics' skills is evident here, and is regulatory in this case. The reason for the link is given as an operational imperative.

From a different perspective, one could argue that the reason behind the raising of the education level is because there are simply not enough jobs to go around, and raising education levels is one way of screening people and keeping certain people out. As early as the seventies there were critiques of the view that there is a direct link between literacy and productivity. Sticht (1978) found that a low reading level did not appear to be detrimental to the job performance of many poor readers. In 1980 Diehl and Mikulecky undertook a workplace literacy study and found that the kind of reading that took place on the job was more often than not a ready opportunity to use print, rather than the need to do so (Diehl and Mikulecky, 1980). Rifkin (2000) found that many jobs were being deskilled and concurred with Zuboff (1988) that the actual literacy requirements of many jobs were quite modest.

One could argue that jobs and the skills to do these jobs have changed since these studies were undertaken. However, Hull (2000) (writing in the United States) and Castleton (2002) (writing in Australia) have continued to argue against the accepted view of mainly government and business that there is a direct link between low skilled employees and poor performance of companies and the economy. In my study focusing on one company I investigate whether there is a link between low-skilled employees and their ability to carry out their jobs competently, performance within the company and therefore, by implication, the broader economy (although I acknowledge that a case study cannot necessarily be generalised).

The broadening definition of skill reinforces certain things over others – Ainley (1994) cited in Payne (2000: 363) says that 'personal' and 'transferable' skills are actually 'social and generic competencies'. He questions whether these 'skills' or 'competencies' can be 'acquired' equally by all as he states:

> To present attitudes and habits detached from their cultural context as technical abilities that can be acquired piecemeal in performance not only divorces them from the cultural context that gave them their original meaning but represents them as equally accessible to all students whatever their class, cultural background, gender or race.

Ainley makes a point about 'skill' being an ideological concept as he states:

> …the real personal and transferable skills required for preferential employment are those of white maleness and traditional middleclassness (cited in Payne, 2000: 363).

This comment suggests that so-called 'skills' (or particular 'skills') are used to keep certain types of people 'in' and certain others 'out'. These 'skills' are used

as a means to exclude. Avis (1996: 117) cited in Payne (2000: 363) makes a similar point to Ainley when he states that:

> …skill remains as ever socially constructed, while the more it overlaps with attitudes, behaviours and character traits, the more it becomes bound up with the cultural capital of certain groups, and acquires the distinctive whiff of elitism.

In my study I draw on this expanding definition of 'skill' and also look at what is meant by 'competence'. I question whether particular 'skills' are used as a means to exclude those who do not have them, and, if so, ask whether this is a fair practice within the particular context I look at.

3) Literacies and their meanings

In my study I focus on 'literacy', particularly 'literacy' that is used in the workplace (i.e. workplace literacy), and 'literacy' that is used to determine whether a person has met the requirements for ABET Level 4 (as per this company's policy for employment). I am mindful of the many definitions of the term 'literacy' and trace the changing definitions below.

In 1951 the UNESCO Expert Committee in Standardisation of Education Statistics declared that:

> A person is considered literate who can both read with understanding and write a short simple statement on his everyday life. A person is considered semi-literate who can read with understanding, but not write, a short simple statement on his everyday life (UNESCO, 1951) (cited in Land, 2005: 12 and 85).

This is a technical definition of literacy. This changed in the next decade to include a more functional definition. The International Committee of Experts on Literacy in 1956 felt that a literate person is someone who should be able to 'function(ing) in his group and community' (this definition typifies the 1960s) (Land, 2005: 12 and 85).

The definition broadened further in the 1970s, when it was felt that literacy was a 'contribution to the liberation of man and his full development' (The Declaration of Persepolis, from the International Symposium for Literacy, held in Iran, in 1975). (Land, 2005: 12 and 85).

In the preface to his book 'The social uses of literacy', Brian Street (1996: 5) brought the issue of power into the definition of 'literacy':

> An ideological model of literacy begins from the premise that variable literacy practices are always rooted in power relations and that the apparent innocence and neutrality of the 'rules' serves to disguise the ways in which such power is maintained through literacy…there are no 'genres of power' as such, only culturally based ways of knowing and communication that have been privileged in relation to others.

While I do not necessarily agree with the "New Literacy Studies' scholars when it comes to the teaching of literacy (as I think it could be limiting), I find their definition of 'literacies' to be pertinent to the focus of my study in the following two ways:
Firstly, who controls and decides what 'literacy' is, and the issue of power relations behind this, are highlighted by the New Literacy Studies' scholars. In my study I look at issues of power and who decides who is included and who is excluded and why. Secondly, the New Literacy Studies' scholars do not accept the 'standard picture of literacy' (Winchester, 1990: 21) (which is very technical and concerned with a particular kind of reading and writing), and neither do many

others. Wink defines a number of 'literacies', and explains academic literacy as 'languages of schools and universities' and workplace literacy as 'languages of our jobs' (2005: 47).

In my study I look at what kinds of 'literacy' and 'numeracy' are measured, and for what purpose/s.

H.S. Bhola (1994: 33 and 34) describes 'workplace literacy' as:

> ...literacy skills and subject matter (that) are both linked to the workplace of learners. The literacy requirements of the job or jobs being done by workers are analysed. A curriculum is then developed that can teach those skills.

He describes 'task-specific literacy' as 'functionality carried to its extreme. It ties learning of reading and writing to specific tasks to be performed by an adult'.

While I use the argument that there are many 'literacies', the 'prevalent discourses' as the following examples cited in Gibson (1996: 49) show, see people as either 'literate', or 'illiterate' and by implication inferior and lacking in something.

> Illiteracy is one of the biggest handicaps these people have. Teaching them literacy will make them full members of the community. There is so much they do not know. (Mrs A, wife of a farmer).

> The lack of access to basic education, including literacy and numeracy, has consigned millions of our people to silence and marginalisation from effective and meaningful participation in social and economic development. This had had a particular impact on women, who comprise a large proportion of the illiterate. (ANC, 1994: 87).

People already in the 'new' workplace or wanting to become part of it are also being similarly divided.

> Through such discourses the 'illiterate' are portrayed as marginalised and in 'deficit' (Hull, 1994: 43). It is assumed that this deficiency impacts on their work performance and that the acquisition of literacy skills will both empower and 'develop' them (O'Connor, 1994) (Gibson, 1996: 49).

There would appear to be some sort of 'known' standard or measure 'out there' of what it means to be 'literate', and if someone does not meet this then he or she is deemed 'illiterate' and incompetent. The advocates of New Literacy Studies contest this notion and I will draw on their arguments as part of this study.

> In the autonomous model (Street, 1984) literacy is constructed as a universal, neutral, technical skill (Street, 1990: 2, 3) and the 'working knowledge' acquired by workers (Hull, 1994: 52) is negated. Ignorance and lack of literacy are often presented as synonymous (Gibson, 1996: 51).

I will argue that 'literacy' is neither 'universal', nor ' neutral', nor merely 'technical', and that if one judges people based on a particular set of literacy skills, one could be negating other skills and knowledge, for example tacit knowledge and knowledge one acquires simply because one is an adult and has years of experience. Joan Wink describes a mariachi guitar player in the following way:

> He carried the entire history of the Mexican revolution in his head, and he could sing and play it. After taking lessons from him, I learned the difference between orate and literate communities (Wink, 2005: 49).

Similarly, Gibson in 'Literacy, knowledge, gender and power in the workplace on three farms in the Western Cape' illustrates the notion of 'illiteracy/literacy' discussed above by quoting a so-called 'illiterate' farm worker, Freek Jakobs who says of himself:

> I cannot really read or write, but I am actually like a person who can read and write. I know my work. I think something and when I have thought it I will not forget it again. I keep it in my head, everything I know, I, how do you say, I file it. Yes, I file it in my head and then I read it again (Gibson, 1996: 55).

Freek Jakobs may not have the so-called 'necessary' skills to enable him to successfully complete a Communications/Language placement assessment, but from his account, it would seem that he is able to do his job competently (he states quite confidently that he 'know(s) his work').

Gibson (1996: 55) writes of another so-called 'illiterate' and 'innumerate' farm worker, Migiel Hendriks, who states 'I may not be able to read or write', but who uses numeracy skills very effectively to make wagons. He states that he is able to make wagons by measuring and calculating 'how much (he) would need to make (them)'. After making one wagon, he adapted the measurements to make more.

> By the second wagon I almost always ordered the correct amount of material (Gibson, 1996: 55).

The idea that so-called illiterate and innumerate workers can do literate and numerate things is described by O'Connor (1994: 270), cited in Gibson (1996: 55) in the statement:

…workers often acquire specialised 'work knowledge' through enculturation in the workplace. Like Hendriks, many of the 'illiterate' farm workers stressed that they had learnt their skills from other workers through collective experience or apprenticeship in the workplace (Luttrell, 1989).

Gibson (1996: 63) in her concluding remarks about farm workers, states that 'conventional literacy discourses' contribute to the 'disempowerment' of workers who are actually skilled in the work they do. But these workers are often judged by 'school' literacy and labelled negatively because they do not have it.

This argument that there is a difference between conventional literacy and other literacies is highlighted in Breier and Sait's conclusion of their chapter 'Literacy and communication in a Cape factory' (1996: 83) when they state that if what management really wants is to improve communication at the factory, then it should turn its attention to 'understand(ing) and pay(ing) attention to workers' communicative practices and interests and stop insisting that communication take place on its terms alone'. Employees should not have to acquire the so-called 'necessary skills to participate'.

To sum up, I adopt a set of premises about 'literacy' which acknowledges that there are many 'literacies', that 'literacy' is context-specific, and a particular 'literacy' (for example academic) may not necessarily be the best measure for another kind of 'literacy' (for example workplace).

As stated previously, very little research exists in the South African context with regards to employment criteria and actual job requirements. However, there are some empirical studies concerning literacy in the workplace that are pertinent to my study. The closest study I could find in South Africa is the one done by Prinsloo and Scholtz (2001) titled 'New workplaces, new literacies, new identities'. In it they explore the idea of the new workplace and its link to 'new

literacies'. They found that the core work in the factory they studied required very few and very basic literacy skills, and could be carried out easily by workers with very little schooling. They also found that team work required higher levels of literacy skills, but this work was dominated by 'team leaders', and the other employees did not 'need nor wish' to extend their literacy for this purpose.

Buque (2003) looked at 'New work practices, new literacies and new identities: a shift towards a 'new work culture' in a soft drinks factory in Maputo''. He cited examples of the so-called 'new work practices' such as 'teamwork'. In Chapter Four, I refer to his example of teamwork in order to question whether a person would need higher levels of literacy and numeracy in order to 'pick up a bottle that has fallen off the conveyor' (Buque does not make this claim, but much of the literature about the 'new' workplace does).

Campbell's study (2002): 'A comparative study of learner and management perceptions of ABET English Level 4 in selected companies in Durban' is of interest to me because in it she found that managers who were paying for ABET English Level 4 classes had very little, if any, understanding of what ABET actually is. This suggests a worrying trend of managers' understandings and how it could impact negatively on individuals, for instance, when it is used as a measure for employment.

<u>4) Human capital theory, screening and credentialism</u>

Human capital theory is generally accepted as having been popularised by Schultz at the 1960 meeting of the American Economic Association (although the ideas have been around much longer) (Schied, 2001: 131).

Schied, Baptiste and others who have written about human capital theory provide a thorough descriptive analysis of human capital theory and its relation to screening and credentialism (Schied, 2001; Baptiste, 2001). Synthesising from

these works the argument is as follows: Human capital is seen as heavily influencing economic success. The notion that an employee is a 'product' comes from human capital theory. The new worker needs to be able to work efficiently and effectively. The new skills listed under 'Skill and its expanding definition' above, are examples of the 'requirements' that the new workplace, or rather, the people who run the workplaces claim 'new' workers need. Supposedly these new 'skills' enable him or her to work more 'efficiently' and 'effectively' than traditional workers. Human capital theory focuses on the economic productivity of people. An investment in someone's training in the workplace, for example, should lead to a 'return-on-investment' in the eyes of the business owners (for example, the employee should become more productive). If there is no 'return', there should be no training. The idea of education or training for other purposes besides a purely economic one, does not fit with what human capital theory espouses.

There has been, and continues to be, much critique of human capital theory and its link to education and training, and education and/or training's link to productivity and so-called 'return-on-investment'. Fred Scheid in 'Struggling to learn, learning to struggle: workers, workplace learning, and the emergence of human resource development' states that:

> Baptiste (1994) and Rubenson (1992), among others, have pointed out that the economic rationale for HRD, human capital theory, is much more problematic than its advocates suggest. They challenge human capital theory's basic tenant that long-term benefits or rate of return from investment in education leads directly to increased productivity and economic growth. (Scheid, 2001: 125).

Also writing on the issue of education and its purpose, Lingard cited in Foley (1994: 8) says that:

> The competitive state…seeks to transform education from a citizen's right
> into an instrument of economic policy. A revived human capital theory
> conceives people as instruments of production, 'as objects to whom value,
> for both the individual and society, is added through education and
> training' (Lingard, 1991: 30).

Screening and credentialism are linked to human capital theory in that they are two of the mechanisms that are used to decide who is 'in' and who is 'out' in a particular context. The argument given by proponents of human capital theory and its link to education/training and productivity, is that screening and/or credentialism are used to select the 'right' candidates for the job/s. The issue of 'trainability' is also argued here (i.e. people with higher levels of education are more 'trainable'). This dominant discourse is challenged by John Killeen, Richard Turton, Wayne Diamond, Odile Dosnon and Monique Wach in 'Education and the labour market: subjective aspects of human capital investment':

> 'Screening' refers to the use employers make of educational attainment as
> a means of narrowing down the field of applicants. This may imply that
> attainment is a proxy for 'trainability', or it may mean simply that
> employers use attainment as a cheap (and apparently rational) means of
> excluding a certain category or categories of applicants (Killeen et al,
> 1999: 101).

'Credentialism' has long been written about. Berg wrote about it in the 1970s (Berg, 1971), as did Dore in 'The Diploma Disease' (Dore, 1976). The works of Berg and Dore have been explored and applied to education and skills development in the workplace. Killeen et al say that 'credentialism' is 'subject to a variety of interpretations' (Killeen et al, 1999, 101). For the purposes of my research, I use it to mean 'increasing rates of 'over-education', in the sense that skills and knowledge are developed in excess of demand' (Killeen et al, 1999: 101).

The so-called 'required' level or qualification to do a particular job has steadily increased over the years, for example in South Africa more and more companies will only employ matriculants to do low-skilled jobs, such as packing. The argument is that the employee will, with a higher level of education, do the job better or more 'competently', but this argument is contested. In my study, I look at whether the 'developed skills and knowledge' are actually making a difference or whether they are being asked for, but ultimately, not being utilised.

One can accept that people need basic literacy and numeracy skills to perform jobs and to gain knowledge and skills. However, the focus of this research is to find out whether a particular literacy and/or numeracy/maths level (for example ABET Level 4 or Matric) is necessary in order to 'competently' perform a job such as cleaning, packing or operating a machine (at many companies in South Africa, all three of these jobs require a certain level of education). The focus is also on finding out why people who were previously competent to perform certain jobs are now deemed 'not competent'. Documentation of the Food and Allied Workers Union (FAWU) case against South African Breweries (SAB) involving undereducated employees points to this focus.

In 2004, FAWU and others brought a case against SAB to contest the retrenchment of certain employees who were retrenched because they were deemed not to have the necessary knowledge nor skills to be part of a new operating practice known as BOP II (best operating practice), a practice which supposedly leads to world class products (document from case C1008/2001 (FAWU and others versus SAB), 2004: 1099 and 1102). The measure for finding out whether employees would cope within the new workplace environment was determined by assessing their literacy and numeracy levels (using ABET assessments).

The union questioned whether it had been fair for SAB to set an entry level specification for existing employees. The union argued that these new standards

had resulted in 'the retrenchment of those employees with the lowest educational levels' (document from case C1008/2001, 2004: 1095). Many of these retrenched employees had been the longest serving employees at the company, and had also been discriminated against during the apartheid years.

The SAB had in its restructuring process linked particular ABET levels with positions, for example 'Packaging attendant: ABET Level 2 literacy, ABET Level 2 numeracy, mechanical aptitude, one-year experience in a packaging environment' (document from case C1008/2001, 2004: 1120). The union's argument included the question…'was the use of ABET reasonable in the prevailing circumstances?' (document from case C1008/2001, 2004: 1121).

The union's 'expert', Daryl McLean described the assessment as 'flawed in virtually every respect'. He said that ABET unit standards were not a valid assessment of workplace competency or trainability (document from case C1008/2001, 2004: 1127). He also asked whether this assessment actually measured what it was supposed to measure. If it did not, then the test was 'invalid' and had 'no predictive validity' (document from case C1008/2001, 2004: 1128). McLean also stated that ABET unit standards are 'generic in nature' and that:

> They are intended to apply to a wide cross-section of situations and, accordingly, have been formulated at a general level. They do not necessarily accurately reflect workplace-specific language, literacy and numeracy requirements (document from case C1008/2001, 2004: 1129).

McLean also stated that a written assessment of school literacy and numeracy is not an appropriate measure of a person's 'ability to read and interpret workplace instruction forms or do the calculations that are required in the workplace' (document from case C1008/2001, 2004: 1129). He also stated that it was possible that an employee in a brewery may know the English vocabulary used in

work instruction forms, and he or she may be able to fill in work instruction forms, yet that same person may fail a generic literacy placement assessment.

> This was because people in a workplace who fill in work instruction forms on a daily basis know what its purpose is, recognise the text type, recognise visual cues and interpret the meaning of it in that context (document from case C1008/2001, 2004: 1129).

He made the same argument for numeracy.

He emphasised the importance of workplace experience and in the judgment, it was stated that:

> …personnel without certification at these levels may have developed competency in such positions (document from case C1008/2001, 2004: 1131).

Even though the above example is about employees already in positions, it is similar to my case study in that it is about suitability for employment (these employees had to re-apply for their posts). This 'suitability' is linked to a new operating practice known as BOP II (best operating practice), a practice which supposedly leads to world class products (document from case C1008/2001, 2004: 1099 and 1102). This is part of the 'new workplace' and, therefore, similar to my case study. An ABET assessment/test is used to determine this 'suitability' (as in my case study).

No evidence was given in the court case by SAB to do with the appropriateness of choosing ABET as the instrument of measurement (document from case C1008/2001, 2004: 1127). The judge ruled that retrenched employees were to be reinstated as the 'measure' used was not appropriate or fair.

The dominant discourse, strongly influenced by human capital theory, suggests that the skill of operating a machine and/or the associated 'things' one has to do in the workplace have changed radically, so new 'skills' are needed in order to function effectively in the 'new' workplace.

There is a counter-argument to the above, which suggests that 'spiral(ling) qualifications' (Dore, 1976: 24) are being used as a way of screening people because there are simply not enough jobs to go around in our new globalised world.

We live in a society where the victim is often blamed for his or her problem/s or deficiency, and this is aptly stated by Sheryl Gowen cited in Breier and Sait (1996: 66), who writes of the United States experience:

> …this discourse…leads to 'a casting of blame of the ultimate flaws in Taylorism and industrialisation and the nation's resultant inability to compete in a more competitive and sophisticated global economy directly on American workers and the schools that have educated them'. Yet, American businesses are in trouble for a wide variety of reasons that have nothing to do with worker illiteracy (Gowen, 1994: 125).

5) Policy, practice and social justice

Since 1994 the South African government has produced very noble policy documents which focus on transformation and development and specifically target people previously disadvantaged by apartheid. My study focuses on employment policies, both national and at company level, and I am interested in understanding how the national 'intent' has been implemented in one workplace in South Africa.

Even though my research takes the form of a case study and cannot be generalised, it is framed within bigger issues, such as globalisation, human

capital theory and inclusion and exclusion. This study may not be able to answer the bigger question issues, but questions to do with these issues should be raised, such as 'Are people who were discriminated against because of apartheid laws still being discriminated against in the form of exclusion from jobs?' 'Is one's education level now being used as a means to exclude?'

South African policy documents to do with employment, produced since the new government came to power in 1994, such as the Employment Equity Act (Act No. 55 of 1998), are filled with language that states very clearly that the legislation will deal with 'redress', 'equity' and 'righting the wrongs of the past'. The Employment Equity Act seeks to ensure that employers take 'steps to promote equal opportunity in the workplace by eliminating unfair discrimination in any employment policy or practice' (Employment Equity Act, 1998: Chapter 2). The policies to do with skills development (see section on 'The new worker in a global world – what knowledge and skills does s/he need?' above) are also filled with the language of redress, equity and righting the wrongs of the past.

According to Taylor, Rizvi, Lingard and Henry, policy is '….not merely a set of instructions or intentions' (1997: 15). Policies in implementation are often not what they are on paper. For various reasons, the intent of policy is often lost once implemented. I will be using this idea of 'policy as more than text' (Taylor et al, 1997: 15) to explore employment policy such as the Employment Equity Act and the implementation thereof in one workplace.

Much research has been done on 'policy and practice', but very little has been undertaken focusing on employment policies post-1994 and their link to 'competence' in the workplace in South Africa. I will focus on the employment policy of the company in my case study, and will investigate why the policy has been formulated in the way it has.

In the FAWU versus SAB case, it was stated:

> The loss of jobs through retrenchment has such a deleterious impact on the life of workers and their families that it is imperative that – even though reasons to retrench employees may exist – they will only be accepted as valid if the employer can show that all viable alternative steps have been considered and taken to prevent the retrenchments or to limit these to a minimum (FAWU and others versus SAB - document from case C1008/2001, 2004: 1110).

This statement raises the issue of morality, ethics and social justice in relation to the retrenchment of workers. In my study, I raise this with regards to employment.

6) Conceptual Framework

I have chosen to situate my research within the themes outlined and discussed in this chapter ('the new worker in a global world – what knowledge and skills does s/he need?'; 'skill and its expanding definition'; 'literacies and their meanings'; 'human capital theory, screening and credentialism'; and 'policy, practice and social justice') because my study is much more than simply looking at communications/language and mathematics' competencies. My study is also about the 'new workplace' that has emerged with the advent and spread of globalisation, and what this new workplace means for workers (be they 'old'/traditional or 'new').

The terms 'skill' and 'competence' are often used interchangeably. For the purpose of my research, I understand 'skill' to be part of 'competence'. Knowledge and the ability to reflect are other parts (see SAQA's definition in Chapter One).

I explore the themes of 'the new worker in a global world', 'skill and its expanding definition' and 'human capital theory, screening and credentialism' as I answer the first of my three research questions 'What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?' These themes, to do with economic globalisation and new demands required by the new workplace (i.e. the broadening definition of 'skill') and new 'requirements' (i.e. particular educational level/s (linked to 'screening' and 'credentialism')) to meet the 'new demands', frame my study. The 'frame' takes into account the 'bigger picture' as it ascertains what the 'new demands' of the new workplace are and why. My unit of analysis (the knowledge and skill requirements (actual and purported) needed to perform the job of operating a machine competently) is located within this broader context (at a company, national and global level).

I explore the themes of 'the new worker in a global world', 'skill and its expanding definition' and 'literacies and their meanings' as I answer the second of my research questions 'What are the textile company's employment criteria for machine operators?' In order to answer this question, the themes are used within a specific context, i.e. the company at which I undertook my research. I focus on the specific criteria required by the company for employment purposes, and compare and contrast these criteria to the actual requirements/demands 'on-the-job'. I use the idea of many 'literacies' to question the traditional idea of a particular 'literacy' to which all subscribe, and ask the question whether it is fair to use one kind of literacy 'competence' (i.e. academic) to measure another kind of literacy 'competence' (i.e. workplace).

I explore the themes of 'skill and its expanding definition', 'literacies and their meanings' and 'policy, practice and social justice' as I answer the third of my research questions 'If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?' These themes are used at

two levels – at the company level and at the 'bigger picture' level - as I explore the issue of 'exclusion' in relation to 'competency'. I raise questions about morals, values, ethics and justice as I link my case study back to the 'bigger picture' - economic globalisation, unemployment and the right to work.

Chapter Three: Methodology

1) Introduction

This chapter focuses on the methodology I used in my research and explains why I chose the particular paradigm and approach I did. I begin with my research paradigm, which is located within the critical social science tradition, and then go on to explain my research approach which is a case study. I discuss the site, sample and sources and how I collected my data. I then explain how I analysed my data.

2) Research paradigm

My research is located within the critical social science paradigm. My study looks at the appropriateness of the 'measure' used as an entry requirement for a job, and by doing so it explores issues of inclusion and exclusion. These issues are to do with power relations and lead me to raise questions around issues of morality, ethics and social justice. I look at all aspects of my conceptual framework ('the new worker in a global world – what knowledge and skills does s/he need?'; 'skill and its expanding definition'; 'literacies and their meanings'; 'human capital theory, screening and credentialism'; and 'policy, practice and social justice') through a critical lens.

As Kincheloe and McLaren cited in Neuman (2000: 77) so aptly state:

> Inquiry that aspires to the name critical must be connected to an attempt to confront the injustice of a particular society or sphere within the society. Research thus becomes a transformative endeavor unembarrassed by the label 'political' and unafraid to consummate a relationship with an emancipatory consciousness (Kincheloe and McLaren, 1994: 140).

My study deals with the knowledge and skill requirements (actual and purported) needed to perform the job of operating a machine competently. In order to ascertain the relationship between the above (actual and purported), I needed to find out from various people within the organisation what their understanding/s of the above are (in addition to what exists as company policy and my own observations).

Therefore, I could have located my study within an interpretivist paradigm as I interviewed a number of different role players in a particular context, and my data encompasses their varying viewpoints. My study could also have been considered interpretivist because it 'adopts a practical orientation. It is concerned with how ordinary people manage their practical affairs in everyday life, or how they get things done' (Neuman, 2000: 71). However, I do not see 'all points of view' as being 'equal' (Neuman, 2000: 76) (as an interpretivist researcher would). Viewpoints cannot be 'equal' when there are issues of power at play, and in my study there are most certainly issues of power at play and dynamics of control and decision-making. I, like the critical researchers, criticise interpretivism for believing that people's ideas are 'more important than actual conditions' and for ignoring the 'broader and long-term context' (Neuman, 2000: 76). 'Conditions' and 'context' (which I discuss as I examine 'the new worker in a global world' and 'human capital theory') are important components of my study.

My study, like other studies conducted within the critical paradigm, is 'a critical process of inquiry that goes beyond surface illusions to uncover the real structures in the material world' (Neuman, 2000: 76). According to critical researchers, the purpose of critical research is to 'help people change conditions and build a better world for themselves' (Neuman, 2000: 76). While I cannot claim that my study did this or will do this, I can hope that what I have found during the course of my research could provide a starting point for questioning those in positions of power (government and big business) who make and implement policies which affect so many on the ground.

Research using critical theory aims at promoting critical consciousness and breaking down the institutional structures and arrangements that reproduce oppressive ideologies, and the social inequalities that are produced, maintained and reproduced by these social structures and ideologies (Henning, van Rensburg and Smit, 2004: 2).

I, ultimately, take a stand in my study. I, like other critical researchers, 'take a strong value position' (Neuman, 2000: 76).

3) Research approach

My research is qualitative in nature and took the form of a case study. I looked at one organisation in Pietermaritzburg, KwaZulu-Natal - a floorcoverings manufacturing company which falls under the textiles manufacturing sector. I chose to do qualitative research because I was interested in finding out how different people within the same organisation viewed the 'knowledge and skill' requirements within the 'new' workplace. I was interested in ascertaining whether people doing different jobs and at various levels within the same organisation held the same or differing views about 'competence' and why. Qualitative research places special emphasis on interpretation. It 'explain(s) how people attach meanings to events', and allows for events to be seen 'from multiple perspectives' depending on where it is one stands (Neuman, 2000: 144).

There is some criticism of qualitative data and it has been described as, amongst other, 'soft', 'intangiable', 'immaterial' and 'fuzzy' (Neuman, 2000: 145). However, it does

…involve documenting real events, recording what people say (with words, gestures, and tone), observing specific behaviors, studying written documents, or examining visual images. These are all concrete aspects of the world' (Neuman, 2000: 145).

My study involves most of the above in that I interviewed people, observed people at work, and analysed documents.

My case study focuses on the communications/language and maths skills' requirements used as employment criteria, and the actual communications/language and maths' skills needed to operate a machine competently. My case is about whether this 'measure' is a fair one, and examines why it is used.

The aim of a case study is usually to provide an in-depth description of whatever it is one is studying. Case studies strive to find out ''what it is like' to be in a particular situation, to catch the close-up reality and 'thick description' (Geertz, 1973) of participants' lived experiences of, thoughts about and feelings for, a situation (Cohen, Manion and Morrison, 2000)' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 1).

A case study can 'generate understanding of and insight into a particular instance by providing a thick, rich description of the case and illuminating its relations to its broader contexts'. A case study can also be used 'to generate theoretical insights…in developing and testing existing theory with reference to the case' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 3). My research generated a 'thick, rich description' of the relationship between actual and prescribed levels of 'competence' or 'skills' needed to operate a machine in this particular company. It also 'tested existing theory' to do with the 'themes' used in my conceptual framework listed above under 'Research paradigm'.

There are a few limitations when it comes to case study research, which are applicable to my study. One of them is that case studies 'might be strongly influenced by the particular sources that are consulted'. They might also be influenced by 'the particular bias and positionality of the researcher'. Case studies are also 'not necessarily generalisable' (Masters in Education Handout,

University of KwaZulu-Natal, 2007: 4). In terms of the issue of sources 'consulted', I spoke to a range of role players within the company to try to get as broad as possible views on the subject being researched. I discuss 'positionality' and 'generalisability' (under 'Limitations') below.

In this type of research, 'no hypothesis is formulated' (Mouton, 2003: 150). But there can be 'general ideas' or 'expectations' which 'guide the empirical research' (Mouton, 2003: 150). I had no hypothesis, but I did approach the research with some 'general ideas', such as 'the new worker in the new workplace' and human capital theory, which guided my research. In this regard, I believe my case study 'develop(ed) and test(ed) existing theory with reference to the case' and 'illuminat(ed) its relations to its broader contexts' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 3).

4) Positionality

The main source of error in case study research is the 'potential bias of (the) researcher' (Mouton, 2003: 150). I entered into this research knowing my 'bias'. From working in the field of adult education since 1994 (including in an industry-context), I have much anecdotal evidence of ABET assessments being used as a means to 'measure' and exclude potential employees from employment, and/or existing employees (through retrenchments). I have always had strong views on this – I am opposed to an ABET assessment being used as a 'measure' in a workplace context, such as industry. (The purpose of an ABET placement assessment is to place learners in the correct ABET level/s, so that they can embark on a learning programme). I have endeavored to be as 'open-minded' as possible throughout my research process, allowing for the opinions of all interviewed to be dealt with as fairly as possible, and to carefully consider all counter-evidence, from the collection of data to the analysis thereof. I have made sure that I considered seriously all evidence, whatever its relation to my initial position on the topic.

<u>5) Site, sample, sources</u>

My study took the form of a case study and focused on a large floorcoverings manufacturing company in Pietermaritzburg, KwaZulu-Natal. Having worked with many students who come from the clothing and textile sector, I wanted to undertake my study in this area. One of the reasons I chose this particular company was to do with the issue of access, which can often be a barrier. I was able to gain access to this site with ease as I know someone who works there.

The company was established 23 years ago and makes a range of floorcoverings which it supplies to customers across the world. It has in excess of 600 employees. The process of manufacturing floorcoverings involves a number of sequential manufacturing processes located in different departments. I observed two machine operators in a department that deals with the product in its early stage, and one operator who works in a department that deals with the product in its later stage. This company has undergone some technological changes, such as machines that are more automated in some departments. I was taken into one such department where I observed operators using these machines (I did not interview operators in this department).

My unit of analysis is the knowledge and skill requirement (actual and purported) needed to perform the job of operating a machine competently. In order to ascertain the relationship between the two (actual and purported), I did the following:
I observed three machine operators at the company. I interviewed the same three machine operators (one is also a Shopsteward). I also interviewed a Supervisor, a Department Manager, the Training Manager, the HR Manager, the person who administers placement assessments, and the Quality Assurance Manager who deals with ISO (International Organization for Standardization) 9001 (to do with standards for quality management systems). I chose this sample

of interviewees because I wanted to capture a range of different voices and viewpoints from the different levels within the hierarchy of the company: management, supervisory and operator level.

The interviews were carried out in the following order: Machine Operator A; Machine Operator B; Shopsteward/Machine Operator C; HR Manager; Placement Test Administrator; Supervisor; Department Manager; Quality Assurance Manager; Training Manager. The reason for this order had much to do with availability and logistics. I observed the machine operators after interviewing them. The interview/s helped to create a relationship which facilitated the observation that followed. The observations also involved some verbal interaction, such as explanations by the operators of what they were doing. I used semi-structured interviews, with several 'set' questions and several that I added based on interviewees' responses. The interview questions mainly focused on asking about the reading, writing, numerical and visual skills required by machine operators. The observation schedule mainly focused on observing what reading, writing, numerical and visual skills were being utilised by machine operators as they did their jobs (See Appendix 4: Selection of interview questions and observation schedule).

I also looked at various documentary sources to do with employment and skills development, at a national and organisational level. My documentary analysis consisted of national policies to do with employment, specifically the Employment Equity Act. I requested the company's policy document on employment, and job descriptions of machine operators. Instead of these, I was given a policy document on staff development and certain SETA-related documents, such as a Workplace Skills Plan and an elective assessment for machine operators. I also looked at the section on 'Competence awareness and training' under 'Human resources' in the ISO 9001 document. I studied the national literacy and numeracy unit standards at ABET Levels 1-3, the language and mathematics unit

standards at NQF level 1 (ABET Level 4), and the Independent Examinations Board placement tool for Communications/Language and for Mathematics.

6) Purpose and research questions

In my research I am concerned with 'how' and 'why' questions. Yin (2003: 6) states that these questions 'are more explanatory and likely to lead to the use of case studies, histories, and experiments as the preferred research strategies'.

The purpose of this research is to ascertain what knowledge and skills a person requires in order to competently perform the job of a machine operator in a floorcoverings manufacturing company.

4) What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?
5) What are the textile company's employment criteria for machine operators?
6) If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

7) Research techniques

In case study research, one 'collect(s) data from people and institutions in their everyday situations' (Yin, 2003: 72). I spent a number of days 'on the factory floor' collecting data, using a number of different techniques commonly used in case study research.

The mode of observation or sources of data in case studies is usually 'participant observation; semi-structured interviewing…; use of documentary sources and other existing data' (Mouton, 2003: 150). I used observation (non-participant); semi-structured interviews and documentary sources.

Data collection

'In-depth interviews, observation and documentary analysis are often used in case studies' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 4). The strengths of using interviews in research are that they are 'targeted' and 'focus directly on (the) case study topic', and 'insightful' (Yin, 2003: 86). I used face-to-face semi-structured interviews, with several 'set' questions and several that I added based on interviewees' responses. (See Appendix 4: Selection of interview questions and observation schedule).

The questions focused mainly on finding out about the reading, writing, numerical and visual skills needed by machine operators in this company. All interviewees were asked certain general questions; questions to do with reading, writing, and numeracy/maths skills; and all were given an opportunity to add any additional comments. Managers were, in addition to the above, asked for statistical information; educational levels of employees and about the selection process. Operators were also asked about whether the workplace had changed in any way. The research questions were created out of the key questions, with a strong focus on the use of language and maths in the workplace.

I was able to use 'extensive probes' (Neuman, 2000: 273). This enabled me to address one of the weaknesses of interviewing - 'bias due to poorly constructed questions' (Yin, 2003: 86). I also did follow-up 'interviews' via e-mail with some interviewees, in order to establish clarity on some points. I recorded all face-to-face interviews, with permission from the participants, and this enabled me to deal with another interview technique weakness - 'inaccuracies due to poor recall' (Yin, 2003: 86).

I also observed machine operators doing their jobs and walked around the factory to look at such things as notice boards and health and safety signs. Strengths of this type of technique are that it 'covers events in real time' and

'covers (the) context of (the) event' (Yin, 2003: 86). During the observation visits, I '(paid) attention, watch(ed), and listen(ed) carefully' (Neuman: 2000: 361). I also asked questions to establish clarity on certain issues.

My observation schedule was broken down into three main parts – 'reading requirements', 'writing requirements' and 'mathematical requirements'. The 'reading' section focused on instructions; specifications; notices; visuals, symbols and colours; memos, etc; payment; policies and procedures. This section was followed by a 'writing' section and then a 'reporting' one and an 'oral requirement' one. I was trying to ascertain whether operators write as opposed to report orally, or whether both are done, and if so, how much of each is done. A 'mathematical' section followed and then a 'training requirements' one. I also allowed space for operators to comment.

Weaknesses of the direct observation technique are that it can be time-consuming and costly. These factors did not impact on my research as I only observed three machine operators and did not have to make many trips to the factory. Yin (2003: 86) states that 'reflexivity' is also a weakness as the 'event may proceed differently because it is being observed'. In the case of my observations, the machine operators had to continue their work as is, as there were targets and deadlines that had to be met. Yin (2003: 86) also discusses 'selectivity' as a weakness – although I observed very few machine operators, I also visited other departments (although I did not formally observe the operators in those departments for sustained periods of time), and I asked questions about the more automated departments.

My research questions informed my data collection; for example when I constructed the research instruments I broke each key question into a number of smaller sub-questions, which helped me to answer the key questions. I was able to draw on the key questions as I collected the data.

I also used documentary sources, which according to Yin (2003: 86) are 'stable' and 'can be reviewed repeatedly', and 'unobstrusive' ('not created as a result of the case study'). Documentary analysis is an important component of my research as one of my 'themes' is 'Policy, practice and social justice'. The issue of the implementation of policy, and the impact thereof 'on the ground', is explored in this study.

I did request, on two occasions, information about the percentage of machine operators who had been promoted since the new employment policy came into being, as I wanted to see how many of them have an ABET Level 4. I was told I could have this information, but I was not given it. I do not believe I it was 'deliberately blocked' – another weakness Yin discusses (2003: 86), as the company at which I conducted my study was extremely open to me doing my research there, and obtaining whatever information I required. I am, therefore, unsure why I was not given this information.

Data analysis

Qualitative research often makes use of case studies. Then the data is analysed 'by organising it into categories on the basis of themes, concepts, or similar features'. (Neuman, 2000: 163) (which I did). The aim of a case study is usually to provide an in-depth description of whatever it is one is studying. Case studies strive to find out ''what it is like' to be in a particular situation, to catch the close-up reality and 'thick description' (Geertz, 1973) of participants' lived experiences of, thoughts about and feelings for, a situation (Cohen, Manion and Morrison, 2000)' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 1).

I analysed my findings according to the key themes and sub-themes (all b), and I did this starting from my conceptual framework, literature review, research questions and from my questions which I used for interviews (in other words, from the top-down). I also analysed my findings from the end point (or bottom-up)

using interviewees' responses. In my analysis, I look at all of the above through a critical lens. The key themes are set out in Chapter Four.

I broke the themes into sub-themes and looked for 'patterns of data' and 'linkages' (Stake, 1995: 53) in order to do this. The sub-themes emerged from 'patterns' and 'linkages' that were evident across my conceptual framework, literature review, research questions, questions I used for interviews and from interviewees' responses to the questions. Some sub-themes are found under more than one theme because they illuminate the themes differently.

In Chapter Four, I analyse my findings under each theme and sub-themes that fall within each theme.

8) Ethical considerations

The issue of 'confidentiality' is the main ethical consideration I had to deal with in my research. A researcher has 'a moral obligation to uphold the confidentiality of data' (Neuman, 2000: 376). I dealt with the issue of confidentiality in the following ways:

I obtained permission from the HR Manager to do my research at the particular company I chose. The HR Manager introduced me to the Shopsteward, who then liaised with the various participants and introduced me to them. I obtained participants' 'informed consent' by firstly, speaking to them about the research, and then giving them a letter explaining what my research was about and a form (either in English or isiZulu) to sign. Interviewees signed these before I began the interview/s. I checked that all interviewees were willing to take part in the study, and I explained to participants (verbally and in the letter) that they could withdraw from the research process at any point. I taped all the interviews with permission from the interviewees. I explained to participants that anonymity would be upheld - none of the people I interviewed have been named, nor the company.

As a critical researcher, I have taken a stand in my research and I have questioned, challenged and critiqued the way things are, especially to do with issues around power relations and (in)justice. I would like my research to assist people to see 'false illusions around them so that they can improve their lives' (Neuman, 2000: 76).

9) Limitations

The limitations of doing case study research are usually to do with the lack of generalisability of the results. This means that I cannot generalise my findings to other textile companies and/or to other organisations in general. However, 'the issue of generalisation is hotly debated within the case study literature…case studies might also shed light on other, similar cases, thus providing a level of generalisation' (Masters in Education Handout, University of KwaZulu-Natal, 2007: 3 and 4).

Yin (2003: 41) writes of the 'representative' or 'typical' case when explaining 'single' cases. These cases deal with 'the circumstances and conditions of an everyday or commonplace situation' and represent, for example, 'a manufacturing firm believed to be typical of many other manufacturing firms in the same industry' (Yin, 2003: 41). So, lessons learned from a particular 'manufacturing firm' can be informative about other similar companies/organisations.

Yin also writes of the 'revelatory' case in which a researcher 'has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation' (2003: 42). A well-known example of this is Elliot Liebow's book, written in 1967, about unemployed men called 'Tally's Corner'. This single-case study looked at single men who lived in a poor, inner-city neighbourhood, and it 'provided insights into a subculture that had prevailed in many U.S. cities for a long period of time, but one that had been only obscurely understood' (Yin, 2003:

43). This single-case generated further research by others, and ultimately led to policy developments in the United States.

Hesketh in her article 'What can we know from case study research?' explores 'the possibilities for generalisation and theory development from this mode of research' (2004: 103). She looked at a Management Studies curriculum and argues that:

> there is (thus) a possibility that the findings have wider applicability, but if so, the same kind of improved outcomes would depend on similar learning conditions, supported by the same type of course philosophy and approach, interests, circumstances and resources.

Yin and Hesketh make strong arguments for the possibility of generalising from a single-case. Even though my case study only looked at one company, I have much anecdotal 'evidence' that there are similarities in other organisations, and would argue that more investigation needs to take place in this area. This is an issue of ethics, morality and social justice.

Chapter Four: Findings and Analysis

1) Introduction

This chapter focuses on my findings and analysis thereof, taken from the literature I studied, the interviews I conducted, the observations I made and the documentary sources I analysed. Qualitative research often makes use of case studies, as I did. The data is then analysed 'by organising it into categories on the basis of themes, concepts, or similar features' (Neuman, 2000: 163), so that meaning can be made of the data. I analysed my findings according to the key themes that I identified from my conceptual framework, literature review, research questions and from my questions which I used for interviews (in other words, from the top-down). I also analysed my findings from the end point (or bottom-up) using interviewees' responses to questions. According to Stake, 'analysis and interpretation are the making sense of all this' (1995: 71).

I broke the themes into sub-themes. I looked for 'patterns of data' and 'linkages' (Stake, 1995: 53) in order to do this. The sub-themes emerged from 'patterns' and 'linkages' that were evident across my conceptual framework, literature review, research questions, questions I used for interviews and from interviewees' responses to the questions. Some sub-themes are found under more than one theme. This is because my five themes are closely linked to one another and share many commonalities, I draw from the same data under different themes, the themes illuminate the data in different ways, so it is useful to have some overlap, such as 'skills' needed in the new workplace being closely linked to the expanding definition of skill, which in turn links to the meanings of literacies. All of the above are framed by human capital theory as this is prevalent in the 'new workplace' (see Chapter Two). The issue of social justice is then raised as many policies and/or practices are called into question.

The key themes are:

- *The new worker in a global world – what knowledge and skills does s/he need?*

  Sub-themes: new workplace, technology, change, workplace literacy, attitude, maintain quality.

- *Skill and its expanding definition.*

  Sub-themes: new workplace, reading, writing, numeracy, visual literacy, communication, attitude, practical skills, teamwork.

- *Literacies and their meanings.*

  Sub-themes: reading, writing, numeracy, visual literacy, workplace literacy, communication, inclusion and exclusion.

- *Human capital theory, screening and credentialism.*

  Sub-themes: new workplace, change, recruitment, training, inclusion and exclusion.

- *Policy, practice and social justice.*

  Sub-themes: inclusion and exclusion.

I grouped the sub-themes under each theme in a particular order. That is according to my prioritising of them based on what emerged from the conceptual framework, literature review, research questions, questions I used for interviews and from interviewees' responses to the questions.

2) Thematic analysis

(2.1) The new worker in a global world – what knowledge and skills does s/he need?

This theme of the 'new worker' is evident in the first and second of my three research questions:

- What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?

- What are the textile company's employment criteria for machine operators?

The HR Manager stated that the company does not have a written employment policy, but that prospective employees need to have a Matric and undergo an Independent Examinations Board (IEB) Adult Basic Education and Training (ABET) placement test in order to ascertain their ABET level/s. Prospective employees need to be 'placed' at least at ABET Level 4 on the test. I asked if he could explain the reason for this ABET level 4 'policy'. He stated that it was a 'push from training and skills development' (HR Manager, 2006). The company decided to investigate educational levels within the organisation approximately six years ago, and they were 'shocked' at how low they were. He also stated that the 'calibre of job seekers is higher than it was in the past', so concluded that ABET level 4 is not 'unfair'. He stated that in 'most of the (internal) manuals which are based on ISO 9001 (an international quality system), there are stipulated levels/standards with regards to literacy and numeracy'. He also referred to a SETA requirement and said that this was the minimum level required in order for someone to embark on a learnership (HR Manager, 2006).

The Independent Examinations Board's placement test's purpose is for placing learners into ABET levels. It was not constructed as an employment selection device. Please see Appendix 1 (selection of questions from IEB placement tests) attached (with permission of IEB)).

This company has been an ISO listed company since 1996. This means that the company must adhere to all the requirements in the ISO (International Organization for Standardization) code of practice. I spoke to the Quality Assurance Manager and she stated that 'there is a clause in the code of practice that relates to human resources/training' (Quality Assurance Manager, 2006). It is point 6.2 entitled 'Human resources' and 6.2.2 'Competence awareness and

training', under which there are five criteria (International Organization for Standardization, 2000):

1. Determine the competence levels of people performing the work that affects quality.
2. Provide training to satisfy the need.
3. Have procedures for determining the effectiveness of training.
4. Personnel must be aware of the relevance and importance of their job and how they contribute to the quality objectives.
5. Maintain records of education/training.

The 'competence levels' in the first point above are determined by the specific company. ISO is the framework and individual organisations provide their own specifications.

I asked the Training Manager if he believed the employment criteria at the company were created because of a 'push from training/skills development', as stated by the HR Manager. He said he did not think that was the 'entire reason'. He said that 'it is in the company's interest to expedite learnerships'. Therefore by recruiting at a higher literacy/numeracy level, the company is 'minimising the implications of ABET'. He then said that the company is:

> …not opposed to ABET. As we speak we are actually running ABET programmes. But, certainly to try to speed up the cycle of processing learners through a learnership (Training Manager, 2006a).

He explained that another reason for the implementation of the 'ABET Level 4 requirement' was that six years ago the company did an audit of literacy and numeracy levels and it revealed that 70% of the workforce was at ABET Level 2 or below. The company managers were 'quite shocked' and had assumed 'that people could read and write'. He added that 'from a quality perspective' (once again ISO), they needed to look at the situation. The company did not have

criteria for literacy and numeracy when employing people and this was 'incompatible with the state of technology at the time'.

He added that:

> …then, of course, correlations were drawn between poor quality and machine faulting and work accidents and da da da and all the rest of it. And so a cause and effect relationship developed immediately….and it's still not 100%...the feedback I'm getting from Department Managers is that operators who are employed meeting those new literacy and numeracy requirements, that their….uuh…what's the right word I'm looking for? That they integrate much quicker into the department and are able to communicate more freely and more openly and are generally at a higher calibre.

I asked him to explain what he meant by 'integrate' and he explained it as:

> …their learning cycle is much quicker. So when I say integrate, it's rather assimilate far more rapidly to the environment that they are exposed to…they can conceptualise quicker because they can read and write and understand manuals and procedures and processes and training manuals so therefore the learning curve is far more rapid (Training Manager, 2006a).

The Department Manager I interviewed did not agree with the Training Manager's statement. I asked the Department Manager: 'Does a person with an ABET Level 4 (language and maths) do his/her job better than a person without this minimum educational requirement?' His response was 'not necessarily'. When I asked him to expand on this, he spoke about 'day to day experience' as being important and that older workers have 'this experience', and that younger ones are not necessarily better.

He then spoke about a machine operator who he described as 'semi-literate' and said 'her only problem is she has a problem with books!' The Department Manager did not find her being 'semi-literate' a problem at all and he said that, if need be, she gets assistance from her supervisor. Getting assistance appeared to be very common and quite acceptable - many interviewees stated this. One of the questions I asked the Department Manager was if numeracy/maths skills are required by operators and he said 'not really'. He added that the 'supervisor does all that'.

The Department Manager also stated that many of the experienced machine operators are the ones that can fix machines if something goes wrong, even though this is not part of their job, and that the newer operators are not able to do this.

When I asked him to explain 'multi-skilling', he said that this involves an operator being moved to another machine if someone is ill or on leave. He believed the 'older operators' were more reluctant to do this, citing reasons such as being 'too old and not wanting to learn'. He added that they would 'rather stick to what they know'. He said that, in this instance, the newer employees are happy to learn about new machines (Department Manager, 2006).

From the above responses, it is clear that the HR Manager and Training Manager have different ideas about the 'new worker' and the knowledge and skills he or she needs, in comparison with the Department Manager. The HR and Training Managers seem to be in agreement with the 'dominant discourse' that states that the 'new workplace' requires new and different skills. The Department Manager said that higher level literacy and numeracy skills are not necessarily needed in order to operate a machine competently. He referred to 'experience' and tacit knowledge – older workers have it because they have done the job for so many years. From my observations of three different machine operators (two of whom do not have a Matric and would, therefore, not be eligible for

employment at this company now), it was clear to me that there is a workplace-specific literacy that the operators have acquired (see 'Literacies and their meanings' below), and that this is not necessarily related to the communication or numeracy assessed in the IEB placement test.

The Training Manager raised the issue of technology change and a higher level of skill needed to operate the new technology (this is found in much of the literature to do with the 'new workplace'). All three machine operators, when asked by me if the newer machines were easier or more difficult to operate, said that the machines are 'easier and faster'. They agreed that their jobs as machine operators were made 'easier' by the new machinery. Machine Operator B's response to my probing with regards to what is 'easier' about the machines, elicited the response: 'Everything' (Machine Operator B, 2006). Machine Operator C said 'it makes the job to be more easier (sic) than before' (Machine Operator C, 2006).

Once again, there is incongruence with the so-called complexities of the 'new workplace' and what is actually happening on the factory floor. The Supervisor I interviewed concurred that the new machines have made the job of a machine operator easier, but she did add that there is an initial fear of the unknown/a fear of technology, especially by those who cannot read or write. She then went on to say that 'most things are done by computers' (Supervisor, 2006). I would therefore argue that de-skilling is actually occurring, and that de-skilling certainly does not require higher levels of literacy nor numeracy because people are required to do less, not more (for example, the newer machines have more buttons that need to be pressed, and the computers then 'do the work', as opposed to the older machines which required more actual labour from the operators).

This same Supervisor, when asked the question: 'Does a person with an ABET Level 4 (language and maths) do his/her job better than a person without this

minimum educational requirement?' said that it helps them 'to understand the job better'. She mentioned that the operators are able to fill in quality sheets better and they can clean the machines 'in the right sequence'.

I do not fully understand what the Supervisor meant by her statement 'understand the job better' as the job is 'taught' to new recruits over a one to three day period - this is on-the-job training and is done either by a supervisor or another operator. It is therefore unclear to me how the literacy/numeracy skills would help the operator 'understand the job better' if a person was explaining how the machine works using the actual machine - this is not classroom-based learning. A semi-literate or illiterate person is not necessarily a stupid person and understanding something is not completely reliant on being able to read and write. I will deal with the language and maths needed to operate a machine under the heading 'Literacies and their meanings'.

The Supervisor felt that those with higher literacy and numeracy skills are 'easier to train'. She felt 'they understand better because they read and write' (Supervisor, 2006). The Training Manager said that all machine operators who get permanent jobs at the company are taken through the elective assessment that they have developed. One firstly gets employed as a contract worker (from the recruitment agency's 'pool' – all of these prospective employees must have an ABET Level 4).

This company uses a recruitment agency to recruit prospective employees - I interviewed a person who is responsible for administering and marking the IEB tests. The results are then sent to the recruitment agency. She said (in response to my question) that there is no assessment that tests any kind of hard skill. She added that, besides the IEB placement test, prospective employees' oral ability 'is noted when they write the placement assessment'. Although she said she believes ABET Level 4 is a fair measure, she also stated that 'attitude' and 'motivation' are very important'.

A similar comment to the above was made by the HR Manager who said:

> …you've got to have the [attitude], you've got to want to work as well…a lot of people come with the necessary minimum levels, but, you know, are not keen on working (HR Manager, 2006).

From the above comments, I would deduce that a willingness to work, i.e. a good attitude towards one's work, is very important. This is obviously not assessed in the placement test (of course, it is a very difficult thing to assess) and, although it is stated as being important, it is not clear whether this is taken into consideration when employing someone. Perhaps it is picked up during the interview process, but many prospective employees have already been excluded by the interview stage because they have not been 'placed' at ABET Level 4.

(2.2) Skill and its expanding definition.

This theme of 'skill and its expanding definition' is evident in all three of my research questions:

- What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?
- What are the textile company's employment criteria for machine operators?
- If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

As discussed in Chapter Two, the meaning of the word 'skill' has changed as the workplace has changed. Skills that were once considered not important in the workplace are now being used as prerequisites for employment, such as reading with understanding, writing, thinking skills like problem solving, learning how to learn, thinking of new ideas, setting goals, and choosing best alternatives; and

also personal qualities (U.S Department of Labour (SCANS), 1991)*.*

The company at which I conducted my research has an employment 'policy' for machine operators, albeit not in written form, that stipulates a minimum requirement of Matric and ABET Level 4 competency in Communications (in English) and Maths. All prospective employees must meet these criteria. No other qualifications or experience are required in order to proceed past this first stage of the selection process. The HR Manager said that the prospective employees are then put on an actual machine at the company to see 'whether they are suitable or not'. No one else said this when I asked what the employment procedure is.

Wolf (cited in Gamble, 2003: 18) discusses 'employer demand' and claims that:
> …the evidence on skills suggests that employers in the brave new 'knowledge economy' are after just those traditional academic skills that schools have always tried to promote. The ability to read and comprehend, write fluently and correctly, and do mathematics appears more important than ever.

This kind of thinking is clearly what has driven this company, and many others, to institute a policy such as the Matric/ABET Level 4 one. Whether these particular language and maths skills actually make for a better machine operator is not obvious to me. The responses given by the Department Manager and my observations of the three machine operators at work, suggest that the level of language and maths required by machine operators is not as high as ABET Level 4 (Grade 9) (see Appendix 2: South African Qualifications Authority's overview of ABET GETC). Counting and basic addition and subtraction (which was the maths requirement on this factory floor) is an ABET Level 1 skill (see Appendix 3: South African Qualifications Authority's overview of ABET Levels 1-3 communications and maths literacy). I explain this more fully below under 'Literacies and their meanings'.

If the language and maths' selection requirements are actually higher than what is really needed on the factory floor, then the question arises: What is happening that this 'requirement' has become a so-called necessity in this company, and indeed in many companies and organisations in South Africa and throughout the world, and why is it happening? (I raise this more fully under the theme 'Policy, practice and social justice').

Gamble (2003: 20) cites Wolf in her argument that:

> …being over-educated for a job does not necessarily make people more productive, it also does not necessarily make them less motivated or worse at what they do. The one thing it does do is to make formal qualifications a stronger market requirement, so that employers may well believe that anyone without a formal qualification is not worth employing.

This statement above about the force of the market and about credentialism will be more fully explored under the theme 'Human capital theory, screening and credentialism'.

Domingos Buque (2003) in 'New work practices, new literacies and new identities: a shift towards a 'new work culture' in a soft drinks factory in Maputo' discusses the concept of 'teamwork' by using this example:

> The front line workers make it clear (sic) that the work is done by teams; their concept of team corresponds either to the totality of the workers on the line of production or to the small groups of workers attached to specific activities; responsibility for work is not confined to workers performing a specific task; everyone has responsibility for the work, even the Industrial Director is obliged to put up (sic) bottles fallen on the conveyor. Independence or interconnectivity is a feature they display in their understanding of the way they get the work done (2003: 36).

'Teamwork' is one of the supposed 'new' skills that the 'new workplace' requires of its workers. This is found in much of the 'new workplace' literature, such as the SCANS Report (1991) referred to in Chapter Two. Buque himself does not state that 'teamwork' requires a high level of literacy or numeracy, but he uses the example above to show how things have supposedly changed in the 'new workplace'. I would argue that this kind of 'teamwork' was around long before the 'new workplace' came into being, and that lifting a fallen bottle has nothing to do with literacy or numeracy, which are other 'skills' listed as 'requirements' for the 'new workplace'.

The Training Manager stated in our interview that employees with the 'correct' levels (ABET Level 4 Communications and Maths):

> …have more potential and they are able potentially to add more value for (sic) the company. Assimilation is so much more quick, so much quicker. The feedback I get from managers is that they notice the improvements straight away (Training Manager, 2006a).

In a follow-up e-mail (1 August 2006), I asked the question again (this time I referred to machine operators who stated in their interviews that newer, more automated machinery is actually easier to operate). The Training Manager responded as such (this is part of his response):

> By virtue of the fact that the equipment is more automated, of course the burden is reduced on the operator from an effort and skill perspective. Clearly the automated machine has reduced human intervention and decision making and speeded up the process, otherwise one wouldn't automate. However, if there are detailed operating instructions accompanying such equipment, then it would be correct to say that higher learning would assist the operator in interpreting the process instructions etc and fulfilling the additional requirements accompanying automation. Therefore, it wouldn't be true to generalise that higher levels of lit/num would necessarily make it easier for an operator to work with automated

machinery. In fact, the degree of automation could make higher levels of lit/num superfluous. It all depends what the demand on lit/num is in the activities that accompanies the automation, or upon which the automation is dependant on. This may be significant or minimal - pending equipment (Training Manager, 2006b).

This response seems to stand in some tension with other comments made by several of the interviewees about the supposed 'necessity' for employees to have higher levels of literacy and numeracy in order to do their jobs competently. In this e-mail, the Training Manager states that 'the degree of automation could make higher levels of literacy and numeracy superfluous'. He raises the issue of 'operating instructions' and the need for literacy here. While I do not refute that, my observations reflected something quite different. I saw the 'job instructions' of the machine operators I observed, and the language was simple and included such things as colours. I am not sure what other 'operating instructions' may need to be read (there may be more complex ones in other departments), however all three of the operators I observed, all in different departments, knew exactly how to operate their machines without consulting any 'operating instructions' - they all have years of experience. The machines that are operated are done so in exactly the same way day after day, so there are no changes to the way things operate (unless new machinery is brought in). I was also told by various interviewees that supervisors assist with any difficulties, such as reading instructions. I asked the Department Manager if this was 'a major hurdle' and he responded: 'no, it's not' (Department Manager, 2006).

When I asked Machine Operator B if she has anything to add at the conclusion of the interview, she said: 'In my job…to do the quality check is the most important thing' (Machine Operator B, 2006).

Question: 'How do you do the quality check? What is that?'

Answer: 'To do quality check is to check the carpet…if it's got any stain (sic)'.

Question: 'How do you know that the carpet is okay? Is it because you have worked here a long time? You can see quickly the carpet is not okay? How do you know that? Would I know?'

Answer: 'Let's say now I take you and go there..Then let's say now come and check the carpet. You must take your time and check it. You'll see that If the carpet is white, there is not supposed to be a black mark…when carpet is floral, the floral colour must be always the same, not on this side must come big, on that side small (sic)'.

She is able to pick up a stain in the carpet immediately as she has been doing the same job for many years. I would argue that this is something that one learns, that it is related to experience and tacit knowledge that develops with time. I do not see how a literacy or numeracy skill would assist one here.

The Shopsteward/Machine Operator C spoke about tension and 'bobbins being tight'. I would argue that she is able to know about tension, etc, because she has a 'feel for' it as she has been working with things like bobbins and tensions for many years. In order to find out where she learned this, I asked her.

Question: 'Where did you learn that, you know, to know that the tension is right? Did someone teach that to you or do you just know that?'

Answer: 'The supervisor..... – she will go around and see. Then she will come and see if the tension is right, so if it's not right, she will show us….They showed us and they tell us'.

Once again, I would argue that this particular skill has everything to do with experience and tacit knowledge (obviously the machine operators do not have to ask the Supervisor for assistance after they are shown something and understand it/can do it sufficiently). The link between the tension of a bobbin to literacy and/or numeracy is unclear to me.

Learning from the Supervisor came up a number of times, such as in the following exchange with Machine Operator B:

> Question: 'Where did you learn to be a machine operator?'
>
> Answer: 'I learnt from here'.
>
> Question: 'And how did you learn?'
>
> Answer: 'The supervisor showed (sic)'.

I asked if machine operators need literacy or numeracy skills for the workplace for things other than their machines, for which I found they need very basic ones, and I was told that 'operators must also know about house-keeping and safety' and that they 'may have meetings if urgent'. Notices on notice boards in this factory are mainly in English. The HR Manager said that most notices are written in English, and added:

> …unless there is something that we really want to enforce and we feel that it is quite important, then we get it translated into Zulu as well (HR Manager, 2006).

I was told that the official language of this workplace is English, albeit there being no written policy regarding this. From my observations, it was clear to me that English is just one of the languages spoken here. People communicate in isiZulu, which makes sense as many of the employees are Zulu speakers. The HR Manager's comment above indicates that, although English may be the 'official' language of this workplace, there are many employees who cannot read in this so-called 'official' language, and this is acknowledged. I will look at this in more detail under the theme 'Literacies and their meanings'.

The quality checks, tensions and 'official' language issues all highlight for me the differences between what is thought to be 'reality' and may just be perception or 'what is thought to be', and what is actually 'reality'. Experience and tacit knowledge, rather than particular literacy or numeracy skills, are important for the quality checks and knowing about different tensions. There may be an 'official'

workplace language, but it may well be different to what is actually spoken on the factory floor.

(2.3) Literacies and their meanings.

This theme of 'literacies and their meanings' is evident in the second and third of my three research questions:
- What are the textile company's employment criteria for machine operators?
- If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

As discussed in Chapter Two, the definition of literacy is a contested one. There are, in fact, numerous definitions of literacy. Joan Wink in her book 'Critical pedagogy. Notes from the real world' asks the question, and then answers it:

> Remember when literacy was reading and writing? Remember when we thought that it was simple? It turns out that we were wrong (2005: 47).

Wink then goes on to explain the many different types of literacies that now exist: *functional* (languages of the streets and of life), *academic* (languages of schools and universities), *workplace* (languages of our jobs), *information* (languages of technology), *constructive* (languages we construct with the printed word), *emergent* (languages constructed with the text before we are really decoding), *cultural* (language that reflects the perspective of one culture – guess which one), *critical* (languages that take us deeper into more complex understandings of the word and the world), and, finally, *literacies* as a new type of literacy that provides a foundation reflective of multiple experiences (2005: 47).

It would seem from my research that the type of literacy being assessed using the Independent Examinations Board's (IEB) placement test, which the company at which I conducted my research uses, would fall under the category 'academic' as defined by Wink above. The type of questions asked are generalised and de-contextualised (see Appendix 1: Selection of questions from IEB placement tests). I would argue that the type of literacy required by machine operators within a factory setting is largely 'workplace', as defined by Wink. I believe 'workplace' literacy is made up of very basic 'academic' literacy within a larger context-specific 'literacy'. Therefore, I would conclude that there is a mismatch between what is being assessed in the IEB placement test and what one supposedly needs in order to be employed at this factory (i.e. 'academic' literacy), and what is actually required of one to do one's job (i.e. largely 'workplace' literacy and very basic 'academic' literacy).

I asked all interviewees what kinds of reading, writing, visual and numeracy/maths skills are required by operators in order to do their jobs competently.
NOTE: Items mentioned are in English, unless I stipulate otherwise.
The list included:

Sheet from supervisor – this has the job instructions which include how many metres of carpet, colours; the speed carpet is moving, (i.e. specs).

Production book.

Case numbers on crates.

Labels.

Downtime sheets (this sheet is written in English and isiZulu).

Metres.

Pressure.

Work procedures, safety procedures, ISO 9001 quality procedures.

Instructions.

Job descriptions.

Notices on notice boards – important ones are written in both English and isiZulu.

Figure 1: Kinds of reading skills operators require

I was told this by the Training Manager that work procedures, safety procedures and ISO 9001 quality procedures are found at work stations and that 'most machine operators' need to read these (Training Manager, 2006a). I did not see any of these, except for a 'job instructions' document which was very simply written. I was told by a few interviewees that all departments are slightly different, so it is possible that there are more complex ones.

The HR Manager was the interviewee who mentioned 'reading instructions in English' when I asked him what machine operators are required to read. He added that 'If you read something you understand it better than if someone explains it to you' (HR Manager, 2006).

The Training Manager said that there are machine operators who do not read notices on the notice boards. Here he was referring specifically to training-related notices. I asked him why he thinks this is the case. He responded (via e-mail (25 July 2006)) as such:

> They probably don't read the notice boards because either: (a) they can't, (b) they have no inclination to (Training Manager, 2006b).

All interviewees spoke of the need to read, but a number of interviewees, including the HR Manager, also said that if someone does not understand something, someone else will explain it to him or her. This sense of congeniality and helping one another came up a few times, and certainly did not seem to hinder the 'production line' in any way.

From the above list, from my observations of the three machine operators, and from analysing the ABET unit standards (ABET Levels 1 – 4) (see Appendices 2 and 3), the reading skills described above are below ABET Level 4 English. They are ABET Level 2 English reading skills (Unit Standard ID 119629: Use basic reading/viewing skills to respond to defined texts). Learners at ABET Level 2 are required to read 'simple texts within a range of different text types of limited length and familiar vocabulary'. Text length at ABET Level 2 is 'up to

approximately 320 words and/or up to five paragraphs/or 10 minutes for assessment purposes. (Longer texts are appropriate for teaching purposes)'. Texts include, amongst other, 'factual', including information pamphlets, tables, diagrams, signed material; and everyday information/practical, including forms, written instructions and directions, signs and notices, simple linear timetables, calendars, letters, simple agendas, messages, product labels, symbols (e.g. logos), appointments and so on (Unit Standard ID 119629: Use basic reading/viewing skills to respond to defined texts, registration start date: 09/02/2006).

I can, therefore, conclude that there is incongruence with the company's 'required' ABET Level 4 English skills needed for employment and actual reading required 'on-the-job', which is more in line with ABET Level 2 reading skills.

Quality control sheets (I was told that some departments allow operators to capture this and that supervisors do this in other departments).

Production sheets.

Production output sheets.

Signing of batch tickets.

Speed of machine.

Pressure.

Dye lot number.

Number of bobbins.

Metre – size.

Downtime sheets (this sheet is written in English and isiZulu).

Figure 2: Kinds of writing skills operators require

During my observations, I witnessed the transferring of information from the sheet to the production book of such things as colours and the speed the carpet is moving (this information is supplied by the supervisor). I was also told that the supervisor can assist with the books if the machine operator is unable to (if operators do their own, it saves the supervisor time). Transferring of information

is a basic skill and once again, the sense of helping one another is evident (and not problematic).

From the above list, from my observations of the machine operators, and from analysing the ABET unit standards (ABET Levels 1 – 4) (see Appendices 2 and 3), the writing skills described above are below ABET Level 4 English. They are ABET Level 2 English writing skills (Unit Standard ID 119634: Write/sign simple defined texts). Learners at ABET Level 2 are able to write simple texts using familiar vocabulary within a range of text types, such as, amongst other, 'factual', including simple summaries, simple notes, short essays, completing simple tables, graphs and diagrams; and 'practical and social', including forms to be filled in: simple forms or simplified versions of, for example, registers, leave forms application forms, timesheets; and simple versions of other practical texts such as notices, lists, instructions and directions, diaries, invitations, messages and telephone messages. Learners at ABET Level 2 can write 2-3 related paragraphs, i.e. about 1 to 2 pages of continuous writing (Unit Standard ID 119634: Write/sign simple defined texts, registration start date: 09/02/2006).

I can, therefore, conclude that there is incongruence with the company's 'required' ABET Level 4 English skills needed for employment and actual writing required 'on-the-job', which is more in line with ABET Level 2 writing skills.

On/start (green) and off/stop (red) buttons.
'Do not touch' sign.
Emergency sign.
Quality sheets - match sample cuts with bobbins.
Health and safety signs, e.g. earplugs.
I was told that in the more automated departments (where higher levels of literacy and numeracy are an 'absolute necessity') that there are more visual symbols.

Figure 3: Kinds of visual skills operators need to know

The visual symbols I saw were very easy to understand. A very basic level of visual literacy is required in order to understand the symbols I observed. All machine operators I interviewed stated that the newer machines (such as in the more automated departments) are actually 'easier' to operate (Machine Operators, 2006). From the above list, from my observations of the machine operators, and from analysing the ABET unit standards (ABET Levels 1 – 4) (see Appendices 2 and 3), the visual skills described above are similar to ones found in Unit Standard ID 119633: Use basic reading/receptive skills to respond to defined simple texts). This is an ABET Level 1 unit standard. The standard states that 'if illustrations are used they should be clear, appropriate, well-placed' and that texts can include 'dialogues, drawings or photographs' if used in narratives. Learners can also read 'simplified advertisements, posters, cartoons, product labels, symbols (e.g. logos), and so on (Unit Standard ID 119633: Use basic reading/receptive skills to respond to defined simple texts, registration start date: 09/02/2006)

Counting (for example, the number of bobbins).
Addition and subtraction.
Multiplication (I did not observe this).
Setting metres.

Figure 4: Kinds of numeracy/maths skills operators require

I was told by a number of interviewees that the maths required by operators is 'basic'. From the above list, from my observations of the machine operators, and from analysing the ABET unit standards (ABET Levels 1 – 4) (see Appendices 2 and 3), the numeracy skills described above are below ABET Level 4 Maths. They are ABET Level 1 numeracy skills (Unit Standard ID 119366: Work with shape, space and measurement concepts; and 119370: Work with numbers; operations with numbers and relationships between numbers). There are no range statements for these unit standards, however, their purposes are as follows:

People credited with this unit standard are able to:

- Recognise, identify, name, compare and sort two-dimensional shapes and three-dimensional objects in the environment and in pictures;

- Read, interpret and draw simple maps;

- Solve simple problems in measurement contexts;

- Recognise and describe objects in three dimensions viewed from different positions (Unit Standard ID 119366: Work with shape, space and measurement concepts, registration start date: 13/05/2008).

- Recognise, order, describe and compare numbers.

- Perform calculations to solve realistic and abstract problems.

- Use different techniques and strategies to calculate.

- Solve problems in contexts (social, economic, environmental, human rights).

- Describe and illustrate a historical number system (Unit Standard ID 119370: Work with numbers; operations with numbers and relationships between numbers, registration start date: 13/05/2008).

I can, therefore, conclude that there is incongruence with the company's 'required' ABET Level 4 maths' skills needed for employment and actual numeracy required 'on-the-job', which is more in line with ABET Level 1 numeracy skills.

I would argue that the above 'academic' literacy and numeracy skills (ABET Levels 1 and 2) are necessary in order to competently perform the job of a machine operator in the company at which I conducted my research, and that higher level ABET literacy and numeracy skills are superfluous.

Communication in the workplace

I was told that the language of the workplace is English. This 'policy' is not in written form. I was told that meetings take place mainly in English, but that there is translation into isiZulu during the meetings. However, the overwhelming sense

I got from being on the factory floor is that the language of day-to-day factory floor interactions is, in fact, isiZulu, and that English is spoken if the person being spoken to cannot understand isiZulu. As stated above, I found that a certain level of literacy in English (as most of the writing is done in basic English) and numeracy is required in order to do the job of a machine operator competently, but I did not find the required level as high as ABET Level 4. In addition to potential employees sitting for an ABET test, they also need to have a Matric. I find it rather puzzling that people entering a workplace with a Matric are asked to write a test checking their ABET levels for literacy and numeracy, as ABET Level 4 is equivalent to Grade 9 (which is less than Matric). When I queried this, I was told it is because of 'bad' schooling.

Operators are required to do basic reading, writing and numeracy, and to understand simple visuals. There is certainly a 'workplace' literacy in operation at this company. There are many terms, such as 'bobbin', that are used on the factory floor and all the operators are familiar with them (a 'bobbin' is a cylinder or reel on which thread or yarn is wound). The operators I interviewed and observed have a great amount of knowledge and understanding about their work, and they 'just know' things because they have been doing their jobs for many years, for example the amount of tension needed as a bobbin runs through a machine, and being able to fix a faulty machine. I do not see how a new person, regardless of his or her levels of literacy and numeracy, would 'just know' these things. This is learned from years of 'doing' and from experience – it is about tacit knowledge. Two of the machine operators (A and B) I interviewed do not meet the new employment criteria (one has a Grade 11 and the other a Grade 8), and both are excellent machine operators - I was told this by a few of the interviewees. There are still many 'older' machine operators, many of whom do not meet the new employment criteria, employed at the company. The 'policy' is for new recruits.

Selection and employment

The IEB placement tools assess the following (see below) and, thereafter, learners are placed into appropriate learning levels. The purpose of the placement tools is to place learners into 'correct' ABET levels for teaching/learning purposes:

Communications:

The assessment is divided into the following sections:

A)   Writing: assesses the level the learner needs to be placed in, according to his/her writing ability.

B)   Reading: Text 1: assesses beginning reading skill.

        Reading: Text 2: assesses more advanced reading skill.

(IEB communications guidelines and marking memorandum, 2003: 2).

Numeracy:

The assessment is divided into seven sections. 'Each question is designed to assess different aspects of number understanding at different levels' (IEB guidelines and marking memorandum, 2003: 2).

Learners are able to:

1   Use efficient and accurate counting strategies.

        Understand the decimal structure of our counting system

2   Identify and extend number patterns.

        Identify and extend shape patterns.

3   Compare, convert and calculate with numbers.

4   Solve problems using various operations.

        Understand money, units of measurement, percentage and ratio.

5   Identify, represent, calculate and compare fractions and percentages.

6   Understand the relative size of numbers.

        Locate numbers (whole, fractional and decimal) on different scales.

7   Read, interpret and calculate with time.

(IEB numeracy guidelines and marking memorandum, 2003: 2).

Figure 5: Competencies assessed by IEB communications and numeracy placement tools (ABET Levels 1-4)

I looked at the Independent Examinations Board's (IEB) placement tool, which is used by the company where I undertook my research. This company uses the placement tool as a first step in deciding who is eligible for employment and who is not (this is not the IEB's placement tool's purpose). I looked at the kinds of questions asked and compared them to the kinds of 'competencies' required to do the job of a machine operator. I found there to be an incongruence between the two – the IEB's tool assesses 'academic' literacy and numeracy, and this workplace has its own 'literacy' which has very little to do with 'academic' literacy. There is a very basic 'academic' component, but it is part of a larger specific workplace 'literacy' in operation. I would argue that the 'academic' skills required for a machine operator to operate a machine competently in this company are at a much lower level to the ones that are used for employment purposes.

Besides the IEB placement test, there is no other formal assessment at the employment stage to see how 'competent' a person is on an actual machine (the HR Manager was the only interviewee who described employees being 'put on an actual machine at the company to see whether they are suitable or not' (HR Manager, 2006)). The Training Manager said that a newly-employed person:

> …goes through a mentoring process and gets exposed to all the training material that is available. They are then, through workplace assessors, taken through the elective assessment we have developed for every department, and ultimately they are assessed against that assessment to establish whether they are competent or not. Even if they are not on a learnership…if a permanent person comes in, then that is the process that takes place (Training Manager, 2006).

The above comment is about permanent employees, not the employees I have dealt with in my research (i.e. the contract employees who are sourced from a pool, who may or may not become permanent employees). Overwhelmingly from the interviews it was clear that the Matric and ABET Level 4 Communications

and Maths are the 'measure', and that the hard skill of machine operating is not assessed (at the employment stage).

The issue of 'attitude' came up a few times in the interviews. It was clear to me from the interviews that a person's attitude is an important component of one's job and the ability to do it well. Even though it was seen as important, it obviously is not something that is measured (and 'measuring' an attitude is a debatable issue). Anecdotally, I have heard from people I have interacted with, such as from students on the Certificate in Education, Workplace Learning (on which I have worked for several years) that 'older', more experienced workers often have 'better attitudes' than newer, younger, and 'correctly' qualified ones. 'Attitude' may be taken into account at the interview stage (I did not ask this question), however by this stage in the selection process, the ABET tests have already taken place, and many candidates have already been excluded.

The issue of 'trainability'

From my research, it is difficult to ascertain a logical link between the 'required' entry level to access employment and what is actually done 'on-the-job'. However, 'trainability' was one of the issues that was raised by most of the interviewees. It was stated that a person with a higher level of education is easier to train. This link between a higher level of education and trainability is echoed in Sultana cited in Gamble (2003: 19):

> At the lower occupational levels, employers in large, medium and small firms are asking for more 'trainable' people. They say they want workers with 'a sound general education, that is literacy and numeracy, the ability to read and follow simple instructions, convey messages accurately, understand simple diagrams, perform basic calculations and have knowledge of such matters as wages, social security, work books and trade unions' (Sultana, 1997a: 48).

The Supervisor I interviewed felt that employees with higher literacy and numeracy levels are 'easier to train'. She felt 'they understand better because they read and write'.

> I asked her: 'Does an ABET Level 4 affect the way a person does his or her job?'
>
> She said: 'It helps them. They begin to understand what is required…'
>
> Question: 'What is the reason for the minimum required educational level?'
>
> Answer: '…some of the people got (sic) a problem in terms of communication'.

She mentioned 'reading notices' and then spoke about 'understanding instructions' that the supervisor gives. She said that the operators must know what the supervisor is talking about (Supervisor, 2006).

Even though the Supervisor is referring to higher levels of literacy and numeracy impacting positively on the job, I do not see how reading and writing helps one 'understand' a hard skill, such as operating a machine 'better'. There are other ways of 'understanding' something, even if one is so-called 'illiterate' or semi-literate. She referred to 'talking' done by the supervisor, and one certainly does not have to be literate or numerate to understand another person 'talking'. I assume she meant giving instructions/explaining something by 'talking'.

The Training Manager raised the issue of technology change and a higher level of skill needed to operate the new technology - this is found in much of the literature to do with the 'new workplace'. The Training Manager's comments about this 'link' can be found in this chapter under point (2): "Thematic analysis; (2.1) The new worker in a global world – what knowledge and skills does s/he need?" He did, in a subsequent e-mail contradict himself (refer to 'Skill and its expanding definition' for his comments).

The above statements and comments seem to indicate that there is some sort of link between higher levels of literacy and numeracy and 'trainability'. Although this idea seems to be fairly widely accepted by those I interviewed, I cannot conclusively say it is in fact so, as I did not research it. The issue of 'trainability' emerged from interviewee's responses and did not form part of my research questions.

I asked the HR Manager 'What percentage of machine operators have been promoted since this new policy came in (of those, how many have ABET Level 4)'? I asked this because I had heard numerous times, in other workplace contexts, that 'career-pathing' and 'promotion' were reasons why new recruits 'need' to have higher literacy and numeracy levels. The HR Manager said I could have this information, but I was not given it. I requested it on two occasions.

The Training Manager said that:

> …the other reason we are so strict on our contract labour meeting these
> requirements is because invariably they become permanent staff
> members...a large percentage (Training Manager, 2006a).

From the above comments, it would seem that there is a 'logical' link between having higher literacy and numeracy levels and 'career-pathing' and/or 'becoming permanent'. However, I would argue that whether employees are contract or permanent, progress within the organisation or not, ABET Level 4 English and Maths should not be a 'necessity' in order to access initial employment. As I was not given the statistics, I do not know how many people with the 'correct' levels have progressed through the organisation. There could be other contributing factors that determine who progresses and who does not in any organisation, for example having a good work ethic and attitude - both of these are unrelated to ABET levels. Attitude was mentioned by several of the interviewees. Wink states that: 'We place high status on literacy, or reading and writing. Status and prestige

are not assigned to those who are *illiterate*, a word that carries heavy connotations of *less'* (2005: 49).

She goes on to say that: *'*Many people in the world carry their knowledge in their heads and not on paper. Important people carry important knowledge in their heads' (2005: 49). I think that Wink's argument has relevance for my argument that machine operators may well be 'competent' operators without having formal qualifications (in language and maths in this case).

(2.4) Human capital theory, screening and credentialism.

This theme of 'human capital theory, screening and credentialism' is evident in the first of my three research questions:

- What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?

Many people in the workplace (and writers of the workplace) speak (or write) about the 'new workplace' using the language of human capital theory, as discussed in Chapter Two. Phillip Brown in his article 'Globalisation and the political economy of high skills' states that:

> One of the most striking features of economic debate in the last two decades has been the importance attached to human capital as a determining factor of economic success. This has led governments around the world to invest heavily in education and training (Brown, 1999: 233).

The Training Manager I interviewed as part of my case study used the following language

> What I have arranged with the labour broker…that there's a permanent labour pool available who meet the communication and numeracy requirements….so they must have a permanent 15 or 20 people there, permanently on their books who have been assessed who are at that

level. When there's a call for people, they pull from that labour source and they then replenish that pool (Training Manager, 2006a).

He also said:

But, certainly to try to speed up the cycle of processing learners through a learnership...(Training Manager, 2006a).

The kind of words he used, particularly 'labour broker', 'pool', 'pull', 'labour source', 'replenish', 'processing' indicate that the employees he is referring to are viewed as simply being part of a production line. As I stated in Chapter Two, the new worker is viewed in a particular way by business – as a 'product' who needs to be able to work 'efficiently' and 'effectively'. Also, the words above indicate that employees can easily be replaced - this is indicated by the word 'replenish'. The element of humanity is called into question. I think the Training Manager used these sorts of words, not because he does not see employees as humans (my sense is that he certainly does), but rather because this is the language of human capital discourse that dominates the contemporary workplace.

The human capital influence encourages 'productivity' as one of the most important elements in a workplace. Employees who can do a job well and in a short amount of time are considered 'of value'. 'Adding value' is a term that was used by the Training Manager about employees in our interview. Sultana cited in Gamble states that:

…rather than being aware of the academic significance of formal qualifications, employers tend to use qualifications as a kind of 'short-hand' (Sultana, 1997a: 55) for the assessment of personality traits (Gamble, 2003: 19).

Here he is referring to higher level jobs. I would argue that in my case study a similar practice is underway, albeit with lower level jobs. A formal qualification - in this case, a Matric and an ABET Level 4 in Communications and Maths - are

being used as benchmarks for gaining access to employment as a machine operator. However, after conducting interviews and observing machine operators at work, it is unclear to me what the link is between these 'academic' skills (literacy/communications and numeracy/maths) and 'workplace' skills required to do the job of operating a machine. As stated in my 'Literacies and their meanings' section I raise the 'trainability' issue, which was raised by most of the people I interviewed. Even if there is a definite link between higher literacy and numeracy levels and trainability, it still raises the question of whether it is fair to only include prospective employees who are 'trainable' or who could go further in their training and/or career-path. It also raises the question of whether it is fair to exclude someone who may be a very good machine operator, possibly with years of experience, but has not got the pre-requisite formal educational requirements.

As discussed in the 'Literacies and their meanings' section, I could not find linkages between what I observed the machine operators doing as part of their jobs (in my case study), and the South African Qualifications (SAQA) ABET Level 4 outcomes. I would, therefore, argue that if prospective employees have to have specific formal skills and knowledge requirements, and these particular skills and knowledge requirements are not actually what their job/s require/s of them, then there must be another reason for these requirements, albeit one that is not upfront nor stated. South Africa has an unofficial unemployment rate of 40% (official: 25,5% (see Chapter Two)) and I would argue that there are simply too many people and too few jobs available, and instituting an employment 'policy' such as the one that exists at this company, and at many others, is simply a way of helping to reduce the number of applicants 'eligible' for an interview. Prospective employees are screened so that numbers can be lessened, and Matric and ABET Level 4 Communications and Maths are the benchmarks that have been chosen (in this case) to do just that. As formal jobs decrease in South Africa and in the world, so there are fewer opportunities for people to gain formal employment. As stated in Chapter Two, the 'new' workplace is characterised,

amongst other, by more technology and new and better machines and these have, in many instances, replaced people as workers (see Chapter Two).

According to the Training Manager this company has actually grown in size since its inception, so my argument about fewer jobs, which is applicable to South Africa in general, is not applicable to this company.

As stated in Chapter Two, 'credentialism' has long been written about. Berg wrote about it in the 1970s as did Dore (The Diploma Disease (1976)). The supposed 'need' to attain formal qualifications has become part of the dominant discourse, and we are constantly reminded about South Africans not having the 'right' or enough skills. In the Sunday Times (16 December 2007) an article titled 'Graduates lack basic job skills, study finds' raised this very issue. The article states that 'South African graduates are not very productive in the workplace because they lack basic skills' (Govender: 2007: 11).

Phillip Brown in his article 'Globalisation and the political economy of high skills' states that:

> There is…a growing recognition that interpersonal, communication, teamwork and creative skills have grown in importance alongside the technical skills needed to perform specific occupational roles.
> Human capital theory has either ignored the importance of interpersonal, teamwork and creative skills, or defined them in 'technicist' terms, as a set of individual competencies which can be taught and learnt in a formal way (Brown, 1999: 236).

It would seem that those in power in the 'new workplace' are of the opinion that there should be additional skills, such as those listed above, that are necessary for employees such as machine operators. Interestingly, according to the Sunday Times article, not even graduates have acquired these 'skills'.

From my observations of machine operators at work, I would conclude that the type of knowledge and skills required (see list in 'Literacies and their meanings' section) are not ones that can be learnt formally, but rather 'on-the-job' and through practice and experience. Being a 'good' machine operator also requires having a 'good' attitude. This was said by the HR Manager and the Placement Test Administrator for this company (HR Manager 2006; Placement Test Administrator, 2006). I agree with this. One of the machine operators who I interviewed stated that she would like to be able to fix her machine if it breaks, but she is not allowed to. She has to call the supervisor. This indicates to me a willingness to learn on her part (she has a Grade 8) and this 'willingness' is not a 'skill' that can be learnt formally and captured on a certificate, or measured through using something like an ABET Communications assessment.

(2.5) Policy, practice and social justice.

This theme of 'policy, practice and social justice' is evident in the third of my three research questions:

- If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

According to Taylor, Rizvi, Lingard and Henry, policy is '….not merely a set of instructions or intentions' (1997: 15). Policies in implementation are often not what they are on paper. I used the idea of 'policy as more than text' (Taylor et al, 1997: 15) as I compared policies, such as the Employment Equity Act (1998) and the employment policy of the company at which I conducted my research to the implementation of these policies.

National policies

In South Africa post 1994, there are many policies that are about redress and righting the wrongs of the past, such as the 'Employment Equity Act' (1998) and

the 'Skills Development Act' (1998). Even though many companies and organisations are implementing these policies, a 'pre-requisite' qualification level for prospective employees which excludes certain applicants without sufficient work-related justification, is neither fair nor valid, and could actually be working against policies such as the ones listed above, which are attempting to deal with 'righting' years of discrimination and marginalisation in South Africa.

Workplace policies

As stated previously, I was told that the employment policy for machine operators at this company is not in written form. However, it is 'policy' and it is implemented (Matric and ABET Level 4 Communications and Maths before one gets interviewed). I also asked whether the company has a language policy and was told that it does - English is the 'official' language of the workplace - but this policy, too, is not in written form. The fact that policy is not in written form is interesting because it begs the question: Whose policy is this, and whose interests does it serve? Even though the Shopsteward was in favour of the 'ABET test' and did not seem to mind that the language of the workplace is English, I assume that these policies have been allowed to take shape without much interrogation or critique (although I have no 'evidence' of this).

Practice

As discussed above in the 'Literacies and their meanings' and 'Human capital theory, screening and credentialism' sections, it is unclear to me what the connection is between the employment criteria (Matric and ABET Level 4 Communications and Maths) and doing the job of machine operating competently. I found no logical link, from the answers given to me during the interviews and from my observations, between these employment criteria and the actual job. The 'trainability' element was raised by several of the interviewees, who stated that having a higher level of literacy and numeracy makes one more 'trainable'. However, I did not research this, so have no 'evidence' to support this.

If there is a link between higher levels of literacy and numeracy and trainability, but no direct link between the actual job of machine operating and the employment criteria, it begs the question: Why is there this 'employment policy'? Could this 'policy' mean that there are simply too many people looking for too few jobs? Could it be that 'screening' prospective employees is a way of 'sifting through' the many job-seekers in South Africa so that a company/organisation only has to deal with a 'suitable' number of applicants, as opposed to a possible extremely large number of 'suitable' applicants?

English may be the 'official' language of this workplace, however, it was clear to me from my observations, that people communicated in their mother tongue, in this case, largely isiZulu, and that this in no way negatively affected their work. English was spoken by an isiZulu speaker when the person he or she was speaking to could not understand isiZulu. Of course speaking in one's mother tongue makes perfect sense to me – one is most comfortable communicating in a language that is one's own. The amount of English needed to perform the job of operating a machine is, as stated in the 'Literacies and their meanings' section' very basic. Meetings take place mainly in English, but there is translation into isiZulu during the meetings. Notices are mainly in English, but the HR Manager made an interesting comment when he said:

> …unless there is something that we really want to enforce and we feel that it is quite important, then we get it translated into Zulu as well' (HR Manager, 2006).

This, and the fact that there are translations, suggests to me that there is recognition that many employees have a limited, or no, ability to read and/or understand English.

<u>Social Justice</u>

If national policies about redress, fairness, equity and righting the wrongs of the past, are being lost on the ground because prospective employees are being excluded from accessing jobs, then this becomes a moral and ethical issue, especially considering the high rate of unemployment in South Africa. If workplace policies are excluding prospective employees from accessing jobs and the criteria used are questionable, as in this case where there is no clear link between the criteria and the requirements of the job, then this also becomes a moral and ethical issue.

My finding to do with the incongruence of this company's employment criteria and the actual job requirements resonates well with the South African Breweries' (SAB) court documents reviewed in Chapter Two, which indicated that the relationship between on-the-job requirements and the particular ABET levels allocated to specific jobs was not appropriate. The Food and Allied Workers Union (FAWU):

> …contended that the application of these standards resulted in the retrenchment of those employees with the lowest educational levels (many of them among the longest serving employees who had been victims of apartheid education) (document from case C1008/2001, 2004: 1095).

It would seem that the people at SAB who had decided to use ABET assessments as a measure had an extremely limited understanding of ABET, as is evident in the following:

> No evidence of any expert nature (or otherwise) was presented by the company in relation to the appropriateness or otherwise of choosing ABET as an instrument of measurement (document from case C1008/2001, 2004: 1127).

Bridget Campbell in 'A comparative study of learner and management perceptions of ABET English Level 4 in selected companies in Durban', found that managers who were paying for ABET English Level 4 classes had very little, if any, understanding of what ABET actually is. She found, amongst other, that:

- 100% of managers (ten were interviewed (from manufacturing, commercial, hospitality and shipping sectors)) had 'incorrect ideas' about the role of English Level 4 in ABET (2002: 43).
- 66% of the managers invested in the course without any idea as to what it was about (2002: 50).
- 100% of the managers stated that whilst they had expectations, they had no clue as to the course content and could not comment about whether or not their expectations had been met (2002: 53).

While I am not claiming that this particular lack of information and/or lack of interest that Campbell refers to applies to my case study, I use the above example to point out a lack of information and/or lack of interest by those in positions of power. After careful scrutiny of the ABET unit standards in relation to the list compiled by the interviewees re the reading, writing, visual and numeracy skills required by operators, I can conclude that not enough information is known about the ABET levels in the company at which I conducted my research.

3) Conclusion

If little is known about ABET (as in Campbell's findings), and if ABET is not an appropriate measure for workplace knowledge and skills (as in the FAWU/SAB court case), then why is an ABET test being used as the first step in the employment process?

Ronnie Morris (Business Report, 2003) points to an example of how post-apartheid workplace policies continue to discriminate against vulnerable and marginalised people. He writes:

…about 800 SAB workers, the products of 'Bantu education', were retrenched because they did not have the required education level. More often than not, these workers were the longest serving employees (Morris, 2003).

Ultimately, this issue is about peoples' livelihoods and lives. It is about people being excluded from jobs and from earning a living. It is about the same people who suffered under apartheid suffering again. It is a moral, ethical and social justice issue and should be challenged and critiqued. Policies post-94 to do with 'redress' and 'righting the wrongs of the past' will be meaningless if exclusion and marginalisation still continue to exist in the new South Africa.

Chapter Five: Conclusion

My research investigated the knowledge and skill requirements for employment as a machine operator. It took the form of a case study of a large textile company, and I focused on finding out whether there is a link between employment criteria for machine operators (which are in place at the company at which I conducted my research i.e. Matric and ABET Level 4 Communications and Maths), and the language and maths' skills that machine operators actually use to do their jobs competently.

I located my study within a critical paradigm because my study deals with much more than merely the issue at hand (i.e. the appropriateness of the 'measure' used as an entry requirement). I looked at why this 'measure' has come to be, and connected it to aspects of dominant ideology, power relations and issues of fairness and justice.

<u>1) Addressing key questions</u>

What knowledge and skills are required for a machine operator in the chosen textile company to operate a machine competently?

I asked all interviewees what communications/language, mathematics and visual skills are required by machine operators - these are listed in Chapter Four. I would term the skills given to me by interviewees as 'basic' communication, literacy, numeracy and visual skills (ABET Levels 1 and 2). The actual skills described by participants in the lists and the observations I made of the machine operators using language and maths' skills in practice are the same. However, much of the literature to do with the 'new worker in the new workplace' suggests that since the 'new' workplace encompasses such things as teamwork, problem-solving, thinking of new ideas, etc, much higher levels of language and maths are needed.

This supposed link (language/maths and the ability to problem-solve, etc) is problematic in itself, as a so-called illiterate person could be a wonderful problem-solver or team player.

The fact that prospective employees at the company at which I conducted my research need a Matric and are also required to do an ABET assessment is evidence that a higher level of language and maths is being requested for entry onto the factory floor (albeit not actually utilised on-the-job).

What are the textile company's employment criteria for machine operators?

Prospective employees need to firstly, have a Matric and secondly, complete the Independent Examinations Board's ABET placement tool for Communications/Language and Mathematics, before being considered for a job as a machine operator. The majority of interviewees (management, supervisors and machine operators) felt it was necessary to have this measure in place, but from their responses, it is clear that the kinds of knowledge and skills they described are knowledge and skills which fall within lower ABET levels than ABET Level 4 (on the National Qualifications Framework (NQF) (refer to Chapter Four for more on this)).

The 'measure' that is used is of significance to my argument. The 'measure' in this case is the IEB placement test (for Communications/Language and Mathematics). These tests assess general literacy and numeracy skills and have nothing to do with workplace competencies. As discussed more broadly under the heading 'Policy, practice and social justice' in Chapter Four, it was stated in the FAWU and SAB case that the ABET unit standards are 'generic' and do not measure workplace knowledge or skills. Therefore using them for a purpose other than the one they are intended for is unfair and unethical. Because of this information about the incompatibility of the 'measure' and what is actually required of employees in their jobs, it was found that the South African

Breweries' employees had been unfairly retrenched (document from case C1008/2001 (FAWU and others versus SAB), 2004).

The issue of 'experience' is completely negated in the recruitment and selection process in the company at which I conducted my research. Interestingly, the importance of 'experience' was raised by the Department Manager who works directly with machine operators - he spoke about 'day to day experience' as being important and stated that older workers have 'this experience', and that younger ones are not necessarily better (Department Manager, 2006). Experience should not be negated in the employment process, especially in a country like South Africa where millions of people have been retrenched (particularly in the clothing and textile sector).

While I believe it is unfair and unethical to exclude people from jobs because they do not meet certain criteria which actually do not measure what it is they are required to do 'on-the-job', this practice is fairly widespread and largely accepted without question (this I know because of my years of work experience in this context). I certainly did not get the sense that there is any intentional malice in the 'policy' of the company at which I did my research. Everyone I interviewed, including the Shopsteward, was in favour of it. Perhaps there is an unquestioning, uncritical acceptance of this practice.

If there is a difference between actual knowledge and skills required and what the company has set or prescribed as knowledge and skills required, how does one account for this discrepancy?

Regardless of the acceptance of the practice of initially using an ABET placement test to assess who can go to the next stage of the selection process or not, one does need to ask the question: Why is this happening? I have concluded that companies and organisations have resorted to screening prospective employees because it is the only means at employers' disposal to

deal with the large numbers of prospective job applicants. They possibly feel overwhelmed by the enormity of the problem (albeit no one I interviewed cited this as a reason). There are so many unemployed South Africans - 40% is the unofficial figure (US-based Heritage Foundation cited in Lehohla, 2005) (the official unemployment rate is 25,5% (StatsOnline, Statistics South Africa, Labour Force Survey, September 2006)), and there are declining jobs in areas such as manufacturing because of South Africa becoming part of the free market economy and because of the increase in automation (Jeremy Rifkin highlights this in 'The end of work', 2000).

> According to SACTWU (Southern African Clothing and Textile Workers' Union), over the past three-and-a-half years, South Africa's fashion manufacturing industry has lost approximately 63 000 jobs, largely as a result of a surge of imports from China. Since 2002, clothing imports from China rose by 480 percent (Business in Africa, 2006).

I was presented with the issue of 'trainability' in several of the interviews I conducted, and this could be a reason why employers want to recruit people with higher literacy and numeracy levels. On the other hand, perhaps employers have almost been 'forced' to find a mechanism to deal with the huge problem of unemployment. This mechanism is one of exclusion and it occurs during the application for employment process. The dominant discourse in South Africa, and indeed the world, around the issue of the high number of unemployed people is to do with the lack of skills as opposed to the lack of jobs. As stated in my Introduction, inadequate skills, including lack of literacy skills, have been cited as the reason why companies and even economies perform poorly (Department for Education and Skills (UK), 2001; Moser 1999 cited in Castleton, 2002: 559). I would argue that it is incumbent on us to focus our attention on the real issue at hand, i.e. the lack of jobs. This is a moral and an ethical issue.

<u>2) Relating findings to literature</u>

<u>Competency and skills debate</u>

Jonathan Payne (2000: 354) states that 'skill' 'is now both broader and more conceptually equivocal than it has ever been'. The 'talk' in the 'new' workplace may be about having 'new' and 'different' skills (such as working in a team and problem-solving or 'whatever employers and policy makers want it to mean' (Payne, 2000: 360)), but none of these supposedly 'imperative skills' are tested in the initial stage of the selection process by the company at which I conducted my research. The IEB placement assessment is the 'first stage' of the selection process. One needs a certain standard of 'school' or 'academic' literacy and numeracy in order to be deemed 'competent' (ABET Level 4 in this case). Experience and attitude are not taken into consideration, which begs the question: how does one ascertain if a person will make a 'competent' machine operator if the skills and knowledge to do with machine operating are not tested? SAQA's definition of 'applied competence' (2001: 21) means being able to know something, do something and reflect on it. How do these skills ensure the operator knows, does and reflects with regards to the job of operating a machine? How can the language and maths' skills be an appropriate 'measure' for a hard skill? (If one does not succeed in this initial stage of the selection process (i.e. language and maths' competence at a certain level), one is not able to proceed further).

<u>New worker/new workplace debate</u>

The dominant discourse, strongly influenced by human capital theory, suggests that the skill of operating a machine and/or the associated 'things' one has to do in the workplace have changed radically, so new 'skills' are needed in order to function effectively in the 'new' workplace. I found no evidence of this in my observations of machine operators at work and in the interviews I conducted with all interviewees. The job of operating a machine competently requires basic reading, writing and visual skills. A 'workplace' literacy related to the particular

context is also needed and this one learns 'on-the-job'. A good attitude was also cited by several of the interviewees as important.

I can, therefore, only conclude that despite the 'trainability' argument (see below), the reason behind the raising of the education level is because there are simply not enough jobs to go around, and raising education levels is one way of screening people, and keeping certain people out (albeit without malicious intent on the part of the employer).

Trainability

The issue of trainability surfaced a number of times in participants' responses. It was said that higher level literacy and numeracy skills are necessary if one is to embark on further training (this was stated a number of times by interviewees, but I have no 'evidence' to support this statement, as this issue did not form part of my research questions). If the 'trainability' issue is valid, and the measure is for that, and not for the ability to do the job, then using a 'measure for employment' is, at the very least, unfair.

3) Reflections on methodology

I entered into this research knowing my 'bias' and, as a critical researcher, acknowledge my standpoint, which challenges and critiques the status quo, if there is injustice and/or an imbalance in power. As I was fully aware of my positionality from the beginning, I went through the research process being mindful of the fact that I needed to allow for other viewpoints (interviews and literature) and carefully consider all counter-evidence. The issue of 'trainability' is one such piece of evidence (discussed in Chapter Four). As a critical researcher, I make no excuses for taking a position against unfairness and injustice (in whatever form) and challenging it.

After writing up my dissertation, it emerged that the data from management was far more extensive and far richer then the data from operators. On reflection, I

can conclude that this had much to do with the issue of power and access. It was relatively easy to meet with and get information from the managers – even the spaces in which we met were conducive to the gathering of information, for example a quiet office or meeting room. I was able to follow-up with managers telephonically or via e-mail. On the other hand, I could only meet with the operators once this had been cleared with managers; the operators were not able to 'take a break' and speak to me – we had to meet at their respective work sites; the level of noise was high and it was sometimes difficult to hear them clearly on the tape recorder as there was a lot of noise interference; and I was not able to follow-up with them telephonically or via e-mail for issues of clarity. The gathering of data was simply easier to do with managers than with operators and this has affected Chapter Four, where the managers' voices are 'louder' than the operators. This points to the way that the actual conditions of data collection affected the quality and extent of the data: the differential power relations and spatial arrangements of managers and workers played a role here.

 4) Recommendations for this workplace

I strongly recommend that this company use an appropriate tool for measuring workplace skills, as opposed to a generic one (such as the one they are presently using (the IEB tool)). Research would need to be done to ascertain what measurement would be fairest. I also do not see why the assessment needs to be in English. Very little English was actually used on the factory floor during my observations, even though it is the 'official' language of this workplace. Also, since the IEB placement tool's purpose is for placing prospective learners into correct ABET levels (the tool should not be used for any other purposes), I strongly recommend that the company abandon the use of this tool completely.

I also strongly recommend a thorough investigation of the knowledge and skills needed in order to competently operate a machine. This investigation should include finding out what literacy and numeracy skills are actually needed in order

to do this. These findings then need to inform written policies, such as an employment policy and a language policy.

5) Ideas for further research

As very little research exists in this area in South Africa (and because this research raises questions around fairness and ethics), I suggest the following should be undertaken:

- Studies at other companies and organisations to ascertain whether there are similar policies and practices (anecdotally I know that there are).
- Research to find more suitable and appropriate tools to be used for employment purposes.

I do think my findings raise deeper questions than simply changing a placement tool. I believe that it is not acceptable to blindly buy into the dominant discourse about the lack of skills being the reason why people are not employed. I believe we should be questioning and challenging this, and asking 'where are the jobs?' Why are graduates unemployed? Why is a piece of paper, as opposed to years of experience, so important? I believe we need to focus on the real issue. This is an issue about ethics, morality and justice. The Constitution of the Republic of South Africa states under 'Social and economic rights' that everyone has the right to 'freedom of occupation - the right to work and to choose your work' (Chapter 2: The Bill of Rights, 1996).

It cannot be acceptable to exclude thousands of people, many of whom have years of experience (the same people who were discriminated against during the apartheid years), from accessing jobs.

Although I argue against using particular ABET levels as a measure for employment in my dissertation, I am fully supportive of people participating in ABET classes. As an educator, I fully support people having access to education and training and being able to learn and develop.

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APPENDIX 1
SELECTION OF QUESTIONS FROM IEB PLACEMENT TESTS

COMMUNICATIONS

Text 2
Now read more about Josiah Thugwane and answer the questions that follow

Josiah Thugwane grows up

When he was 17 Josiah Thugwane saw South African running stars Matthews Temane and Xolile Yawa on television. Josiah decided right then to become a runner.

"I entered this half-marathon race in Bethal. I didn't even have any running shoes, but I won the race, and took home R50. That was it: I knew I was a runner and this was my way out."

Most of South Africa's best long-distance runners come from the mines. Mines often give their best runners time off work to train. They even pay for their running clothes and shoes. The mine puts its name on the runners' clothes. Josiah knew that mines helped good runners, so he took a job as a cleaner at a mine in Middleburg. Very soon the mine started helping Josiah.

By 1996, Josiah was selected to run for the South African team. In the Olympic games in America, Josiah won the 42km race in a time of 2hrs, 12min and 36s. Some people from the newspapers wanted to ask him questions. But Josiah did not speak English, so his coach answered for him.

He thought that when he went home everything would be normal again. But he was surprised – the South African newspapers were coming again to interview him. After that Josiah decided to learn English so that he could answer questions for himself. He took 3 months off from training to learn to read and write in English.

Now Josiah works to help younger athletes in South Africa. He helps to train them and provides running shoes. Josiah says: "Sport has opened a lot of doors for me, but learning to read and write has opened many more."

1. Why did Josiah decide to become a runner?

   _____

   _____

   (1 mark)

2. Why do mines often help their workers who are good runners?

_____

_____
(2 marks)

3. How did the mine help Josiah with his running?

_____

_____
(1 mark)

4. What did Josiah learn when he came back to South Africa?

_____

_____
(1 mark)

5. What two good things happened to Josiah after he went to work on a mine?

_____

_____

_____
(2 marks)

6. Why did the people from the American newspapers want to talk to Josiah?

_____

_____
(1 mark)

7. How did Josiah feel when he could not answer the questions in America?
   Give a reason for your answer.

_____

_____

_____
(2 marks)

8. Josiah won in a time of 2hrs 12min and 36s. Write the following out in words:
   (e.g. km = kilometres)

   hrs = _____

   min = _____

   (1 mark)

9. Why is paragraph 2 in inverted commas? " "

   _____

   _____

   (1 mark)

10. In paragraph 2 Josiah said, "I knew I was a runner and this was my way out." What did he mean by **this was my way out**?

    _____

    _____

    (1 mark)

11. Josiah says: "Sport has opened a lot of doors for me." What does it mean when we say something '**opens doors for us'**?

    _____

    _____

    _____

    (2 marks)

12. Fill in the missing words in the following paragraph. Write only **ONE WORD** in each space.

    Josiah was now famous. When _____ returned home he was _____ hero. The people would not _____ Josiah alone. They came all the time. They _____ on the door and they _____ over the fence to beg him _____ money. They bothered him all the time.

    (3 marks)

NUMERACY

(B2)   Shade $\dfrac{5}{30}$ of the circles.
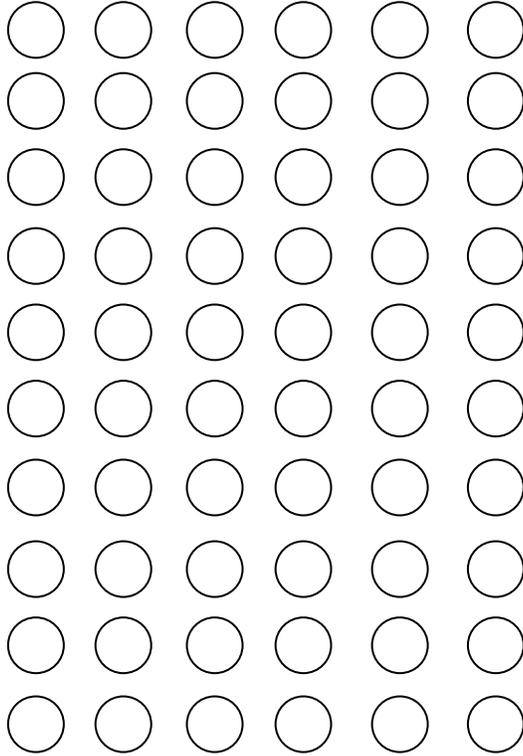
(B3) $\dfrac{5}{30}$ + $\dfrac{10}{60}$ =   _____

(B4)
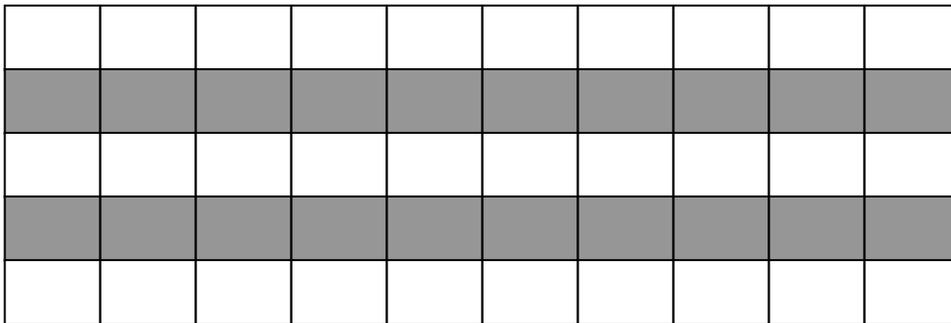
What **fraction** of the blocks is shaded?   _____

What **percentage** (%) of the blocks is shaded? _____

(C1)   Circle the **biggest** amount below:

$\dfrac{5}{8}$ of 60 $\dfrac{1}{4}$ of 60 $\dfrac{75}{150}$ of 60

(C2)   Circle the correct answer.

$\dfrac{1}{10}$ and $\dfrac{2}{10}$

$\dfrac{1}{2}$ of 2,04 is between   1,00 and 1,10

10 and 20

1,1 and 1,2

(C3)   Fill in the missing number.

75% of _____ = 750

APPENDIX 2
SAQA OVERVIEW OF ABET GETC

OVERVIEW OF GETC: ABET QUALIFICATION (SAQA ID: 24153)							
COMPONENT	**ID NUMBER**	**UNIT STANDARDS IN THE ABET:GETC (ID 24153)**	**CREDIT VALUE**	**ID NUMBER**	**LIST OF REGISTERED REPLACEMENT UNIT STANDARDS**	**CREDIT VALUE**	**EXPIRY DATE**
FUNDAMENTAL SUBJECTS							
LLC (COMMUNICATION)	12462	Engage in a range of speaking and listening interactions for a variety of purposes	6	119635	Engage in a range of speaking/signing and listening interactions for a variety of purposes	6	09-Feb-09
	12471	Explore and use a variety of strategies to learn	5	119631	Explore and use a variety of strategies to learn	5	09-Feb-09
	12469	Read and respond to a range of text types	6	119640	Read/view and respond to a range of text types	6	09-Feb-09
	12470	Write for a variety of purposes	6	119636	Write/Sign for a variety of different purposes	6	09-Feb-09
				119641	Identify and respond to selected literary texts	5	09-Feb-09

OVERVIEW OF GETC: ABET QUALIFICATION (SAQA ID: 24153)							
COMPONENT	**ID NUMBER**	**UNIT STANDARDS IN THE ABET:GETC (ID 24153)**	**CREDIT VALUE**	**ID NUMBER**	**LIST OF REGISTERED REPLACEMENT UNIT STANDARDS**	**CREDIT VALUE**	**EXPIRY DATE**
FUNDAMENTAL SUBJECTS							
MATHEMATICAL LITERACY	7464	Analyse cultural products and processes as representations of shape, space and time	2	119373	Describe and represent objects in terms of shape, space and measurement	5	13-Apr-08
	7449	Critically analyse how mathematics is used in social, political and economic relations	2	119368	Describe, interpret and represent mathematical patterns, functions and algebra in different contexts	6	13-Apr-08
	7451	Collect, analyse, use and communicate numerical data	2	119364	Evaluate and solve data handling and probability problems within given contexts	5	13-Apr-08
	14084	Demonstrate an understanding of and use the numbering system	1	119362	Work with numbers, operations with numbers and relationships between numbers	4	13-Apr-08
	7463	Describe and represent objects and the environment in terms of shape, space, time and motion	2				
	7461	Use maps to access and communicate information concerning routes, location and direction	1				
	7447	Working with numbers in various contexts	6				

APPENDIX 3
SAQA OVERVIEW OF ABET LEVELS 1-3 COMMUNICATIONS AND MATHS LITERACY

COMPONENT	ID NUMBER	UNIT STANDARDS IN THE ABET:GETC	CREDIT VALUE	ABET LEVEL	EXPIRY DATE
REGISTERED ABET LEVELS 1-3 UNIT STANDARDS					
COMMUNICATION	119630	Use speaking/signing and listening skills	6	1	09-Feb-09
	119638	Use basic writing/signing skills	6	1	09-Feb-09
	119633	Use basic reading/receptive skills to respond to defined simple texts	8	1	09-Feb-09
	119634	Write/sign simple defined texts	6	2	09-Feb-09
	119629	Use basic reading/viewing skills to respond to defined texts	8	2	09-Feb-09
	119642	Engage in speaking/signing and listening interactions	6	2	09-Feb-09
	119639	Write/sign defined texts	6	3	09-Feb-09
	119632	Use reading/viewing skills to respond to defined texts	8	3	09-Feb-09
	119637	Engage in a range of speaking/signing and listening interactions	6	3	09-Feb-09

COMPONENT	ID NUMBER	UNIT STANDARDS IN THE ABET:GETC	CREDIT VALUE	ABET LEVEL	EXPIRY DATE
MATHEMATICAL LITERACY	119366	Work with shape, space and measurement concepts	2	1	13-Apr-08
	119370	Work with numbers; operations with numbers and relationships between numbers	6	1	13-Apr-08
	119374	Demonstrate an understanding of patterns, functions and algebra	2	1	13-Apr-08
	119369	Work with shape, space and measurement	3	2	13-Apr-08
MATHEMATICAL LITERACY	119378	Work with numbers; operations with numbers and relationships between numbers	5	2	13-Apr-08
	119365	Demonstrate an understanding of patterns, functions and algebra	4	2	13-Apr-08
	119372	Demonstrate an understanding of data handling and probability	3	2	13-Apr-08
	119375	Work with patterns, functions and algebra in different contexts	4	3	13-Apr-08
	119367	Work with numbers; operations with numbers and relationships between numbers	5	3	13-Apr-08
	119376	Demonstrate an understanding and use of data handling and probability concepts	4	3	13-Apr-08
	119363	Apply concepts of shape, space and measurement to make decisions relative to the world around us	4	3	13-Apr-08

REGISTERED ABET LEVELS 1-3 UNIT STANDARDS

APPENDIX 4
SELECTION OF INTERVIEW QUESTIONS AND OBSERVATION SCHEDULE

<u>INTERVIEW QUESTIONS</u>

Semi-structured interview questions
The purpose of these questionnaires is to find out what, if any, language and/or mathematical skills are required in order to do one's job as a machine operator, and how this links to the organisation's minimum required educational level for employment for the job of machine operator.

Tape recorder
Ethical clearance forms

Questions for HR Manager and Training Manager:

GENERAL INFORMATION

Date:

_____

What is your name?

_____

What is your position in the company?

_____

What sector is your organisation in?

_____

How many people are employed by your organisation?

_____

How many are machine operators?

_____

Does your organisation have an employment policy?
If so, *briefly* explain it.

_____
_____
_____
_____

Does your organisation have an equity policy?

If so, *briefly* explain it.

_____
_____
_____
_____

Does your organisation have an education/training policy?

If so, *briefly* explain it.

_____
_____
_____
_____

Does your organisation have a language policy?
If so, *briefly* explain it.

_____
_____
_____
_____

(Get permission before interview to get copies of policies)

STATISTICAL INFORMATION *(send out before interviews)*

How many machine operators in your organisation are:

	Black African	Indian	Coloured	White	Total
Male					
Female					
Total					

How many machine operators' Mother-tongue is:

isiZulu				
isiXhosa				
English				
Afrikaans				
Other				

How many machine operators are:

18 - 25				
26 - 35				
36 - 45				
46 - 55				
56 - 65				
Other				

EDUCATIONAL LEVEL

Does your organisation have a minimum required educational level for machine operators (to be employed)? When did this come into effect?

_____
_____
_____
_____

If so, what is it and how many machine operators have the minimum required educational level?

_____
_____
_____
_____

What is the reason for the minimum required educational level? What do machine operators have to know and be able to do that requires them to have this minimum required educational level (this may not be directly related to their specific job, but rather to the organisation as a whole)?

_____
_____
_____
_____

How much of this is to do with language and/or mathematical skills?

_____
_____
_____
_____

How many machine operators do *not* have the minimum required educational level?

_____
_____
_____
_____

What percentage of machine operators have been promoted from the beginning of 2001 to date?

_____
_____
_____
_____

How many of these had the required educational level?

_____
_____

_____
_____

LANGUAGE/MATHEMATICAL SKILLS

What <u>reading</u> skills are required in order to perform the job of machine operator competently? Please specify in what language these skills are required.

_____
_____
_____
_____

What <u>visual</u> skills (eg understanding signs) are required in order to perform the job of machine operator competently? Please specify in what language these skills are required.

_____
_____
_____
_____

What <u>writing</u> skills are required in order to perform the job of machine operator competently? Please specify in what language these skills are required.

_____
_____
_____
_____

What <u>mathematical</u> skills are required in order to perform the job of machine operator competently? (Please specify in what language these skills are required).

_____
_____
_____
_____

In what ways do you communicate with others in the workplace (employees, management)?

_____
_____
_____
_____

SELECTION PROCESS

Explain the recruitment and selection process?

_____
_____
_____

[*How* is a person selected for the job as a machine operator?
Does s/he have to:
Undergo an interview?
Undergo a practical assessment related to the job?
Undergo a written assessment, involving reading and writing?
Undergo an oral assessment? If so, are the questions related to the job, or to language, or to mathematics, or to language and mathematics, or to all three?
Other:]

_____
_____
_____
_____

If a certain level of language and/or mathematics is required for the job of machine operator, what are the organisation's reasons for this?

_____
_____
_____
_____

Do you have any other comments?

_____
_____
_____
_____

Thank-you very much for your time!

Questions for Machine Operators:

Translator

GENERAL INFORMATION

Date:

_____

What is your name?

_____

What is your position in the company?

_____

How long have you worked in this company?

_____

How long have you been a machine operator?

_____

What is your highest level of qualification?

_____

Where did you learn to operate a machine?

_____

How did you learn to operate a machine?

_____
_____
_____
_____

LANGUAGE/MATHEMATICAL SKILLS

As a machine operator, what <u>reading</u> skills are required in order to do your job? In what language?

_____
_____
_____
_____

As a machine operator, what <u>writing</u> skills are required in order to do your job? In what language?

_____
_____

As a machine operator, what <u>visual</u> skills (eg understanding signs) are required in order to do your job? In what language?

_____
_____
_____
_____

As a machine operator, what <u>mathematical</u> skills are required in order to do your job? (In what language?)

_____
_____
_____
_____

In what ways do you communicate with others in the workplace (employees, management)?

_____
_____
_____
_____

WORKPLACE

Has anything changed in the workplace since you started (eg more technology, fewer employees, multiskilling, etc)?

_____

If so, what?

_____
_____
_____
_____

Has this change/these changes affected the job of a machine operator in any way?

_____

If so, in what way/s?

_____
_____
_____
_____

Do you have any other comments?

_____
_____
_____
_____

Thank-you very much for your time!

OBSERVATION SCHEDULE AND QUESTIONS

Reading requirements

Instructions
Are there written instructions on the machines that operators need to follow in order to operate the machines? If so, what language/s are the instructions written in? What level of language is used (basic (ABET L1-2), complex (beyond ABET levels), somewhere inbetween (ABET L3-4))?

_____
_____
_____

Specifications
Are there specifications that machine operators need to read and understand? If so, what language/s are these written in? What level of language is used (basic (ABET L1-2), complex (beyond ABET levels), somewhere inbetween (ABET L3-4))?

_____
_____
_____

Notices
Are there notices on the notice board? If so, what language/s are they written in? Are all employees required to read them? If an employee cannot read a notice, can someone else read it for him/her?

_____
_____
_____

Visuals/symbols/colours
Are there health and safety notices that all employees need to read? If they cannot, can someone else read them for him/her? Are these notices mainly written (if so, in what language/s?) or visual? Are uniforms colour-coded to depict hierarchy (for eg)?

_____
_____
_____

Memos, etc
Are there any texts employees need to be able to read, such as memos, pamphlets, etc? If so, in what language/s and if they are not read, how serious is this? Can someone else read the text to someone who cannot read?

_____
_____
_____

<u>Payment</u>
How are employees paid? Via ATM? Can all employees operate ATM's? Can employees read their own payslips? Can they read any other documents related to their salaries/wages (such as IRP5s)?

_____
_____
_____

<u>Policies and procedures</u>
Can employees read the Basic Conditions of Employment Act (is it displayed?)? Can they read other policy documents? (Do they have access to these?)

_____
_____
_____

OTHER COMMENTS AND MY OBSERVATIONS
_____
_____
_____

Writing requirements

Are machine operators required to write anything wrt their jobs? Do they have to fill in any forms or timesheets or any other documentation (eg reporting on job)?

_____
_____
_____

<u>Reporting</u>
Are machine operators required to report on their jobs (progress; problems; etc)? If so, is this done in writing or verbally? In what language/s is it done?

_____
_____
_____

Oral requirements

Do machine operators attend meetings? If so, in what language/s are the meetings held? Are machine operators expected to chair meetings; give presentations; etc?

_____
_____
_____

OTHER COMMENTS AND MY OBSERVATIONS

_____
_____
_____

Mathematical requirements

Are machine operators required to do any mathematical tasks, such as adding; dividing; etc? If so, what tasks and how easy/difficult are they (ito ABET level/s?). What units of measurement are used (eg volume, cm, temperature)?

_____
_____
_____

OTHER COMMENTS AND MY OBSERVATIONS

_____
_____
_____
_____

Training requirements

Do all employees take part in training programmes? If so, in what language/s are they delivered? Are materials and assessment done in the same languages? *Need to see samples of training materials.*

_____
_____
_____

ANYTHING ELSE?

_____
_____
_____